CONTRIBUTIONS TO AMERICAN BOTANY. X.

I. List of Plants from Southwestern Texas and Northern Mexico, collected chiefly by Dr. E. Palmer in 1879–80.

II. Descriptions of New Species of Plants from our Western Territories.

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XVIII.

CONTRIBUTIONS TO AMERICAN BOTANY.

By Sereno Watson.

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1. *List of Plants from Southwestern Texas and Northern Mexico, collected chiefly by Dr. E. Palmer in* 1879–80. — I. *Polypetalæ.*

Dr. Edward Palmer's present collection was made during the last six months of 1879, mostly in the region lying northwest of San Antonio, Texas, and along the routes from that place to Laredo and Eagle Pass upon the Rio Grande, and during the following year in the States of Coahuila and Nuevo Leon in Mexico. A nearly complete set of these plants was sent to the herbarium at Kew, England, and a partial list was there somewhat hastily made, which is the basis of the present one. In addition, determinations are given of an excellent collection made by Dr. J. G. Schaffner in the State of San Luis Potosi (likewise partially named at Kew), as well as of some plants received from Professor Alfred Dugès of Guanajuato, and as occasion serves the numbers of the previous collection of Parry & Palmer in Northern Mexico are also cited. The numbers under which Palmer's collection was distributed by him are included in parentheses under the species. The *Cactaceæ* have been kindly named by Dr. Engelmann, so far as their determination was possible, and continual use has been made of the recent catalogue of the Mexican flora by Mr. W. B. Hemsley in the botanical volumes of the "Biologia Centrali-Americana" of Godman and Salvin, which has proved a very material assistance.

Clematis Drummondii, Torr. & Gray. At Uvalde, Texas (3), and Parras, Coahuila (1); also specimens with smaller leaves from Laredo on the Rio Grande (2), nearly equivalent to *C. nervata*,

Benth., which is a more silky-pubescent form, and the same as 2 Parry & Palmer. The species varies considerably in the size and form of the leaves.

Clematis Pitcheri, Torr. & Gray. At Laredo, Texas (7), and from several localities in Coahuila (4, 5, 6, 8), in as many different forms, the last number corresponding to 1 Parry & Palmer, referred to *C. filifera*, Benth., which is to be considered a synonym. This polymorphous species, ranging from Western Illinois to Central Mexico (Guanajuato, from Dugès), is extremely variable in its foliage. The leaflets, usually four pairs, may be either ternate or 3-lobed, or all simple and entire, broadly ovate or cordate to lanceolate, and usually acute, but sometimes very obtuse or long-acuminate. The flowers vary from 9 to 18 lines in length.

Thalictrum strigillosum, Hemsl. At Lerios, Coahuila (9). Apparently one of the more common Mexican species, and probably to be identified with some older one. Ghiesbreght's specimen from Chiapas, referred by Hemsley to *T. longistylum*, also belongs here. Dr. Schaffner collects in the San Miguelito Mountains two very distinct species which are not readily identified. Both are glabrous, one having ascending peduncles bearing close heads of sessile triangular carpels, which are $1\frac{1}{2}$ lines long, with thickened and rib-like angles, the other polygamous, with long recurved peduncles and open heads of 2 to 9 pedicellate compressed carpels beaked with a long style.

Anemone Mexicana, HBK. Santa Rosa Mountains, Guanajuato (Dugès).

Ranunculus geoides, HBK. A low species, silky-pubescent, with the radical leaves 3-lobed. A single specimen was collected at Guajuco, Nuevo Leon.

Ranunculus Hookeri, Schlecht. In the San Miguelito Mountains (183 Schaffner); 6 and 1030 Parry & Palmer. This species, if rightly understood, is a common one in Mexico. The mature carpels have usually a few more or less prominent scattered tubercles upon the sides.

Ranunculus stolonifer, Hemsl. Near Morales, San Luis Potosi (185 Schaffner); 4 Parry & Palmer.

Ranunculus delphinifolius, HBK. In the San Miguelito Mountains (184 Schaffner), and at Guanajuato (Dugès).

Aquilegia longissima, Gray, in herb. Somewhat pubescent with silky hairs: stem three feet high: leaves deeply lobed with narrow segments, glaucous beneath, green above: flowers "lake, white, and straw-color," the lanceolate sepals broadly spreading, 12 to

15 lines long, the petals spatulate, about 9 lines long, the claw opening by a narrow orifice into the very slender elongated spur, which is 4 inches long or more. — In the Caracol Mountains, south of Monclova, Coahuila (10). Allied to *A. caerulea* and *A. chrysantha*, but distinguished from both by the narrower petals and the constricted mouth of the much more elongated spur.

Delphinium leptophyllum, Hemsl. In the San Miguelito Mountains (27 Schaffner); Guanajuato (Dugès); 7 Parry & Palmer.

Delphinium azureum, Michx. Guajuco, Nuevo Leon (11). Apparently not differing from slender few-flowered forms of this variable species.

Cocculus Carolinus, DC. San Antonio, Texas (12).

Cocculus diversifolius, DC. (*C. oblongifolius*, DC.) Laredo, on the Rio Grande, Texas (13). Both with oblong and with ovate-cordate leaves, representing the two forms figured by Moçino & Sesse and described by De Candolle.

Berberis Schiedeana, Schlecht. (*Mahonia trifolia*, Cham. & Schlecht.) In the Sierra Madre, forty miles south of Saltillo (14). The specimens accord very closely with Schlechtendal's description, except that the leaves are all trifoliolate, as in Schiede's original specimens. The racemes are short, about equalling the petioles. The *Mahonia ilicina* of Schlechtendal (*Berberis*, Hemsl.), at first supposed by him to be this species, he afterward identified (Bot. Zeit. 12. 655) with *B. pallida*, Hartw.

Berberis trifoliolata, Moric. In the same locality (15), and also at Lerios, forty-five miles east of Saltillo (16).

Berberis gracilis, Hartw., var. With the 5 to 7 leaflets often rounded at base and the racemes shorter (1 or 2 inches long). In the San Miguelito Mountains (711 Schaffner); 8 Parry & Palmer.

Nymphæa ampla, DC. At San Lorenzo de Laguna, Coahuila (17), and at Monclova (18).

Argemone platyceras, Link & Otto, Icon. Pl. Rar. Hort. Berol. i. 85, t. 43. (*A. hispida*, Gray.) At Saltillo (19); 10 Parry & Palmer. A probable variety was also collected at Parras (20), with the large flowers of a decided pink color, and the seeds less than a line long, scarcely more than half of the usual size.

Argemone fruticosa, Thurber. At San Lorenzo de Laguna, Coahuila, in flower and fruit (21). The flowers, which have not before been collected, are noted as sulphur-yellow, and are 2½ to 3 inches in diameter. The beaks of the sepals are large and conical, terminating in stout rigid spines.

Bocconia frutescens, Linn. At Guajuco, Nuevo Leon (23).

Hunnemannia fumariæfolia, Sweet. At Monterey, Nuevo Leon (22); 1031 Parry & Palmer.

Fumaria parviflora, Lam. At Saltillo (24); 9 Parry & Palmer.

Nasturtium tanacetifolium, Hook. & Arn. At San Lorenzo de Laguna, Coahuila (34), and near Corpus Christi Bay, Texas (35); San Luis Potosi (148 Schaffner); 11 Parry & Palmer.

Arabis runcinata. Biennial, hirsute with simple spreading hairs, low and branching: leaves runcinately lyrate, petiolate, the lobes acute and acutely toothed; lower leaves 4 inches long: flowers small ($1\frac{1}{2}$ lines long), on hispid petioles, the calyx glabrous: pods ascending, an inch long by a line wide, beaked by the long style, few- (about 10-) seeded: seeds elliptical, winged. — In shaded places about San Luis Potosi (155 Schaffner). Allied to *A. petiolaris*, Gray.

Arabis Mexicana. Very slender, glabrous, decumbent: leaves lyrately pinnatifid, the few lateral lobes narrow, distant, mostly entire, the terminal one 2- or 3-toothed or -lobed: racemes elongated in fruit, the flowers very small (a line long), white, on slender spreading pedicels a line or two long: pods ascending, 5 to 8 lines long by half a line broad, abruptly beaked by a rather conspicuous style, the valves reticulately veined, obscurely 1-nerved toward the base: seeds in one row, round, narrowly wing-margined. — Near Guanajuato (Dugès), where it is popularly known as "Lantejuelilla," and considered injurious to cattle eating it.

Cardamine auriculata. Annual, erect or ascending, slender, branching, a span high, very sparingly hispid: leaflets three pairs, petiolulate, ovate or the terminal one oblong-ovate, crenate, about half an inch long or less, often with a small subsidiary auricle or stipule-like leaflet on the lower side at the point of union with the rhachis of the leaf: flowers white, 2 lines long: pods an inch long by half a line broad, ascending on pedicels about 3 lines long, and attenuate above into a long slender style. — At Guajuco, Nuevo Leon (49). Most resembling *C. impatiens*. The *Cardamine Schaffneri*, Hook. f. in Hemsl. Diag. Pl. Nov. 1. 2, is the same as *C. Gambelii*, Watson.

Vesicaria purpurea, Gray. Caracol Mountains, Coahuila (29). Flowers white, becoming pink. A low doubtful form, with yellow flowers, was found in the Sierra Madre, Coahuila (28), and at Monterey, Nuevo Leon (32).

Vesicaria argyrea, Gray. In the Sierra Madre, Coahuila (30); a slender form with narrow leaves, and a taller and stouter form with

broader conspicuously toothed leaves. 25 Parry & Palmer, referred to this species by Hemsley, is rather *V. recurvata*, Engelm.

Vesicaria Fendleri, Gray. (*V. stenophylla*, Gray.) In the Sierra Madre, Coahuila (31).

Vesicaria Schaffneri. Biennial, with several or numerous ascending or decumbent stems, 6 to 15 inches high, simple or branched, canescent throughout with a close scurfy pubescence: leaves linear- to oblong-oblanceolate, obtuse or acute, entire or with one or two teeth on each side, very variable in size (½ to 3 inches long): petals pale yellow or at length purplish, 3 lines long, twice longer than the linear sepals: pod glabrous, globose (narrower at base when young), about 2 lines long, very shortly stipitate, erect on the slender and at length horizontal pedicel, which is about 4 lines long; style about a line long. — On mountains and in shaded places near San Luis Potosi (150 Schaffner, in large part; 26 and 25½ mainly, Parry & Palmer; mixed with *V. argyrea*). With the habit nearly of *V. Gordoni*, which however, like *V. argyrea* and most of the allied species, has an evidently stellate pubescence.

Cochlearia (?) Mexicana. Annual, erect and slender (6 inches high or less), the stem branching above and puberulent: leaves shortly petiolate, ovate, truncate or usually cuneate at base, sparingly toothed, the cauline 6 to 12 lines long, including the petiole: flowers very small, in a flexuose raceme, the yellowish-white spatulate petals (a line long) twice longer than the green sepals: style very short, and stigma capitate: pods glabrous, globose, nearly sessile upon spreading pedicels (2 lines long), 1 to 1½ lines in diameter: valves nerveless: seeds 4 in each cell, subglobose. — At Monterey, Nuevo Leon (10). Referred with some hesitation to this genus (§ *Kernera*), with which it accords as well as with any other. The filaments are straight and naked, with conspicuous glands at base; cotyledons accumbent.

Sisymbrium canescens, Nutt. Near San Luis Potosi (153 Schaffner). 683 Coulter, referred to *S. streptocarpum*, is the same.

Sisymbrium Coulteri, Hemsl. Near San Luis Potosi (154 Schaffner, in part, with the following): 14 Parry & Palmer.

Sisymbrium Palmeri, Hemsl. The typical form, with dense hoary pubescence and undulate-toothed leaves, the lower lyrate. Also var. elatius, Hemsl., taller (1 or 2 feet high), less canescently pubescent and somewhat villous, the leaves thinner and greener, not undulate, the lower large but scarcely lyrate, all strongly auricled; pods somewhat longer (9 to 12 lines) and pedicels rather shorter (2 to

6 lines). Near San Luis Potosi (154 Schaffner, in part); 13 Parry & Palmer.

Erysimum asperum, DC. In the Sierra Madre, Coahuila (48).

Thelypodium longifolium, Watson. Hispid below with spreading hairs: lower leaves unknown, the upper narrowly linear: sepals glabrous, broad and very concave, 2 to $2\frac{1}{2}$ lines long; petals a little longer, oblong, scarcely narrower below: pod very slender, $1\frac{1}{2}$ to $2\frac{1}{2}$ inches long by $\frac{1}{2}$ line broad, beaked by the slender style, spreading or usually pendent upon the slender pedicel (3 to 6 lines long). — In the San Miguelito Mountains (156 Schaffner, in part). This is 52 Hartweg, 687 Coulter, and perhaps 22 Fendler.

Thelypodium micranthum. (*Streptanthus micranthus*, Gray.) Biennial, erect (2 to 3 feet high), more or less stellately pubescent: lower and cauline leaves oblanceolate, sinuately pinnatifid, stellately pubescent, attenuate to a petiole, the upper linear, entire, usually glabrous: flowers smaller than in the last (1 to $1\frac{1}{2}$ lines long), the calyx glabrous or pubescent: pod slender, about an inch long, sessile, nearly terete, the style very short and thick, ascending or sometimes pendent, on pedicels 2 to 4 lines long. — In the Sierra Madre, Coahuila (37), and at San Luis Potosi (156 Schaffner, in part). This includes 23 Fendler, 844 Wright, 610 Rothrock, and 281 Pringle, all of which have been referred to the preceding species.

Thelypodium auriculatum. (*Sisymbrium auriculatum*, Gray.) In the Sierra Madre, Coahuila (25), and at Lerios (50). The only partially incumbent cotyledons, together with the characters of the pods and flowers, and the general habit, seem to require the transfer of this species to *Thelypodium*.

Thelypodium linearifolium, Watson. At Saltillo (36).

Eruca sativa, Lam. At Saltillo (2144), and near San Luis Potosi (152 Schaffner); 16 Parry & Palmer.

Greggia camporum, Gray. At San Lorenzo de Laguna (27), and Monclova, Coahuila (44), and at Monterey, Nuevo Leon (47). A low form with narrow entire leaves was collected at Parras (46); 17 Parry & Palmer.

Synthlipsis Berlandieri, Gray, var. hispida. More or less villous, with little stellate pubescence, the ovary densely hairy, and the pod more loosely so. — Near Corpus Christi Bay, Texas (26). This is the same as 157 and 1417 Berlandier, from Laredo in Tamaulipas, and appears to differ from the typical form only in the pubescence.

Synthlipsis heterochroma. Procumbent and much resembling ordinary forms of *S. Berlandieri*, more or less canescent with stellate

pubescence, and sometimes sparingly villous: flowers bright yellow by day, becoming brownish purple at night: ovary pubescent and more or less villous; pod round-obovate (2½ to 4 lines broad), sometimes shortly stipitate. — At Monterey, Nuevo Leon (33). The pod of *S. Berlandieri* is always sessile, and rounded or almost emarginate at base.

Syntheliopsis Greggii, Gray. At Parras (15); 18 Parry & Palmer. 149 Schaffner, from the San Miguelito Mountains, has usually shorter pods, sometimes scarcely longer than broad. Dr. Gregg's original specimens include the same form.

Capsella rubens, Benth. & Hook. At Parras, Coahuila (39).

Capsella Mexicana, Hemsl. In swampy places near Morales (147 Schaffner): 19 Parry & Palmer.

Capsella (?) Schaffneri. Annual, glabrous or nearly so, erect and somewhat branched mostly from near the base, 4 to 8 inches high, the stem and branches angled and the angles usually slightly pubescent: cauline leaves linear-oblanceolate, obtuse or truncate or retuse, sessile, 4 to 6 lines long, entire or with a few short blunt teeth: flowers white, the petals 2 lines long: fruiting pedicels ascending, 1–2½ lines long: pod shortly stipitate, oblong-lanceolate, somewhat obcompressed, the valves strongly convex, more or less evidently nerved and carinate, 1½ or 2 lines long and beaked by a slender style ½ line long: seeds 4 or 5 in each cell; cotyledons probably accumbent. — San Miguelito Mountains (151 Schaffner). A plant of very uncertain affinities, and perhaps belonging among the *Sisymbrieæ* near *Smelowskia*. The pod varies much, but is decidedly obcompressed when well developed, especially toward the base. In the present uncertain limits of *Capsella* the species may as safely be placed here provisionally as elsewhere.

Lepidium lasiocarpum, Nutt. (*L. Wrightii*, Gray.) Low (6 inches high or less), pubescent throughout with short spreading hairs, the straight pedicels shorter than the pod, stout and much flattened. — Var. tenuipes. Usually taller, more slender, and less pubescent, the pod glabrous: pedicels narrower and more slender, as long as or usually exceeding the pod. At Parras (11), and San Luis Potosi (145 Schaffner). The same as 21 and 22 Parry & Palmer (referred to *L. Menziesii*), and 686 Coulter and 14 Bourgeau, in part (named *L. Virginicum*), and of frequent occurrence through the interior northward to Nevada and Southern Colorado. It has the habit of *L. intermedium*, Gray (23 Parry & Palmer), with which it has been confounded, but is readily distinguished by the flattened pedicel. It

might be regarded as a distinct species, but is connected with *L. lasiocarpum* by intermediate forms, such as those collected at Monterey (38, 42), and 2488 Berlandier (*L. ruderale*, var. *lasiocarpum*, Engelm.).

Lepidium Menziesii, DC. At Monterey (43); San Luis Potosi (146 Schaffner). Also 14 Bourgeau, in herb. Gray, mostly.

Cristatella erosa, Nutt. At Lamar, on Copano Bay, Texas (51). *C. Jamesii*, Torr. & Gray, may perhaps be distinguished by smaller flowers and shorter pods (an inch long or less). The genus, however, should be reduced to a section of *Polanisia*.

Polanisia uniglandulosa, DC. At Soledad, Coahuila (52); also San Luis Potosi (192 Schaffner), and Guanajuato (Dugès).

Polanisia trachysperma, Torr. & Gray. At Laredo on the Rio Grande (54), the typical form, with style 3 or 4 lines long and seeds more or less roughened. Also in the mountains north of Monclova, Coahuila (53), a common form with shorter styles (a line or two long) and smoother seeds; flowers white, becoming pink.

Oligomeris glaucescens, Camb. At Saltillo (1149).

Helianthemum Coulteri. Stems short (3 to 6 inches high), erect from a branched and spreading woody caudex: leaves oblanceolate ($\frac{1}{2}$ to $1\frac{1}{2}$ inches long by 2 to 6 lines broad), acutish, attenuate at base to a very short petiole, rough above with a short stellate pubescence, densely soft-tomentose beneath, conspicuously pinnate-veined: flowers large (an inch broad), shortly pedicelled in rather close corymbs, the acute sepals 3 or 4 lines long: capsule broadly triangular-ovate, a little shorter than the calyx. — At Zimapan (743 Coulter) and in the Morales Mountains, San Luis Potosi (608 Schaffner). It is referred by Hemsley to *H. arenicola*, Chapm., which has narrower leaves, softly pubescent on both sides and not evidently nerved, flowers on longer pedicels and subumbellate, and capsule narrower.

Helianthemum patens, Hemsl. In the San Rafael Mountains (605 Schaffner); 30 Parry & Palmer.

Helianthemum glomeratum, Lag. In the San Miguelito Mountains (137 Schaffner); 28 Parry & Palmer.

Helianthemum argenteum, Hemsl. In the San Miguelito Mountains (606 Schaffner); 29 Parry & Palmer.

Lechea major, Michx. In the San Rafael Mountains (Schaffner).

Lechea Skinneri, Benth. In the San Rafael Mountains (604 Schaffner): 31 Parry & Palmer.

Viola flagelliformis, Hemsl. At Lerios, Coahuila (56), and in the San Miguelito Mountains (182 Schaffner); 1033 Parry &

Palmer. The flowers are described as "rosei" by Dr. Schaffner. 36 Parry & Palmer, referred to *V. pubescens*, is the same, and 736 Coulter (*V. latistipula*, Hemsl.) appears to be an undeveloped form of it.

Viola Hookeriana, HBK. In the San Miguelito Mountains (180 Schaffner); 34 Parry & Palmer.

Viola Barroetana, Schaffn. In the San Miguelito Mountains (181 Schaffner); 35 Parry & Palmer.

Viola cucullata, Ait.? At Saltillo, a single fruiting specimen with broadly deltoid leaves.

Ionidium verbenaceum, HBK.? In the Sierra Madre, Coahuila (55). These specimens accord nearly with the original figure and description, except that the leaves are mostly opposite. It is however described (not figured) as an annual, while this has an evidently perennial slender rootstock. The flowers are purple. 660 Ghiesbreght, from San Cristobal, appears to be the same. *I.* (?) *calceolarium*, Gingin, as represented in the drawing of Moçino & Sesse, is very similar, but with an apparently annual root.

Ionidium polygalæfolium, Vent. Wilson County, Texas (57). A puberulent form, with the stipules very small or obsolete. More pubescent specimens, with somewhat smaller flowers and well-developed stipules, were collected at Monterey. This species seems to include the original *I. lineare* of Torrey, and nearly all that has been referred to it.

Amoreuxia Wrightii, Gray. At Laredo, on the Rio Grande (58), in fine fruit. To this species belongs 37 Parry & Palmer, as well as the specimens collected at Monterey by Eaton & Edwards, and in Sonora by Thurber, all referred by Hemsley to *A. palmatifida*, DC., with which *A. Schiedeana*, Planch., is identified. Aside from the ovate seed of the one and the reniform seed of the latter species, *A. Wrightii* may be known by the five broader lobes of the leaves, rather abruptly narrowed downward, the lower lobe often incised on the lower margin, while the leaves of the other have seven or nine lobes which are narrowed regularly to the base.

Polygala Lindheimeri, Gray. In the Sierra Madre, Coahuila (2113).

Polygala ovalifolia, DC. At Monterey, Nuevo Leon (65); 43 Parry & Palmer.

Polygala pubercula, Gray. In the mountains west of Saltillo (61). Identical with specimens of Schiede & Deppe, referred to "*P. pubescens*, Muhl." Also a form with larger flowers at Saltillo

(66); 42 Parry & Palmer. 42½ Parry & Palmer is the more fertile form with nearly apetalous flowers.

Polygala Palmeri. Perennial, branching, 6 to 8 inches high, densely short-pubescent throughout: leaves scattered, oblong-oblanceolate, truncate and mucronate or abruptly acute, attenuate at base, mostly 6 to 9 lines long by 2 or 3 broad: racemes open and few-flowered: flowers pale greenish-yellow, 3 lines long, soon reflexed; sepals linear-lanceolate; wings pubescent and ciliate, ovate, acute, cuneate at base, about equalling the crestless keel; petals oblong, purplish: capsule flat, ovate, deeply emarginate, pubescent, 4 lines long. — At Juraz, Coahuila. Nearly allied to *P. Americana* and *P. puberula*, and much resembling forms of the latter species, but more pubescent, and with larger flowers and fruit.

Polygala obscura, Benth. At Monterey, Nuevo Leon, sparingly collected; 41 and 44 Parry & Palmer.

Polygala Greggii. Perennial (?), pubescent throughout, the stems very slender and terete, flexuous above and branching, about a foot high: leaves punctate, from oblong-spatulate to cuneate-obovate, obtuse or emarginate, 3 to 5 lines long: flowers few, 2 or 3 axillary near the end of a short leafy branchlet, white, 3 lines long; sepals narrowly lanceolate; wings slightly pubescent, cuneate-obovate, exceeding the narrowly oblong petals, which are longer than the keel and adnate to it half its length; keel without crest, the very broad and rounded lateral margins folded back and covering the hood: ovary pubescent, flattened, elliptical, emarginate. — West of Cerralbo (Gregg). A strongly marked species of this group, remarkable for the long petals and the broad reflexed margins of the keel.

Polygala macradenia, Gray. At Juraz, Coahuila (70).

Polygala alba, Nutt. In the Sierra Madre, Coahuila (68); 39 Parry & Palmer. The lower leaves are often distinctly verticillate.

Polygala scoparia, HBK. At Lerios, Coahuila (69). This is very probably also *P. Mexicana*, DC., but the drawing by Moçino & Sesse is too poor for positive identification. 45 Parry & Palmer, which is referred here, has very short round-quadrate capsules, but still exceeding the petals.

Polygala viridis. Minutely pubescent; stems several, erect or ascending from a biennial (?) root, 3 or 4 inches high: leaves scattered, oblanceolate, acute, attenuate at base, 3 to 5 lines long by 1½ or 2 broad: racemes terminal or often lateral, open, ½ to at length 2 inches long: flowers very small, nearly sessile; wings spatulate (a line long), green with a white margin, exceeding the strongly

hooded keel; petals broadly oblong; crest broad, very unequally 2-lobed on each side: capsule glabrous, oblong, 1½ lines long, slightly inequilateral: caruncle of two linear lobes two-thirds of the length of the pubescent seed. — On Caracol Mountains, Coahuila (2013). Very nearly allied to *P. scoparia*. The crest is a broad triangular lamina on each side of the median line, to which it is attached, with a narrow lobe on the outer side.

Polygala semialata. Glabrous; stems numerous, very slender, angled, from an apparently biennial root, 3 to 6 inches high: leaves scattered, linear, acute at each end, 2 or 3 lines long: racemes terminal, very slender and open (1 to 3 inches long), the very small whitish flowers (little more than half a line long) nearly sessile and soon pendulous; wings broadly spatulate; petals truncate, nearly equalling the fimbriately crested keel: capsule similar to that of *P. hemipterocarpa*, but only 2 lines long, and the dehiscing cell more narrowly winged. — At Monterey, Nuevo Leon (67). With *P. hemipterocarpa* forming a section marked by the curious unequally developed fruit, one cell indehiscent and filled by the seed, the other doubly wing-margined, dehiscing between the wings, and at length unfolding.

Krameria cytisoides, Cav. (*K. cinerea*, Schauer.) In mountains east of Saltillo (59); 1043 Parry & Palmer.

Krameria canescens, Gray. At Soledad, Coahuila (61).

Krameria paucifiora, DC. In the mountains east of Saltillo, single specimens; 38 Parry & Palmer. Distinguished from *K. secundiflora*, DC. (*K. lanceolata*, Torr.), as it is understood, by the uniformly shorter narrowly lanceolate leaves (3 or 4 lines long), and by the retrorse barbs along the more slender spines of the fruit.

Krameria ramosissima. Shrubby and divaricately much branched, a foot or two high, canescent: leaves linear-lanceolate, 1 or 2 (sometimes 3) lines long, often fascicled in the axils: flowers "light maroon": fruit ovate, silky-pubescent, with slender very acute naked spines about half a line long. — *K. parvifolia*, var. *ramosissima*, Gray, Pl. Wright. 1. 11. On mountains near Saltillo (62); also on the Rio Grande (Wright), at Camargo (Gregg), and in Nuevo Leon (Berlandier).

Frankenia grandifolia, Cham. & Schlecht. At San Lorenzo de Laguna, Coahuila (60).

Silene laciniata, Cav., var. with ovate leaves. (*S. Greggii*, Gray.) In the Sierra Madre, south of Saltillo (71). The form with linear leaves, at the other extreme, is the more common; in the San Miguelito Mountains (609 Schaffner); 46 Parry & Palmer.

Cerastium nutans, Raf. At Lerios, Coahuila; near San Luis Potosi (143 Schaffner); 47 Parry & Palmer.

Stellaria cuspidata, Willd. At Morales (124 Schaffner). The identification of this species with the European *S. nemorum*, Linn., is at least doubtful. It appears to have a more herbaceous and much more pubescent calyx, the leaves broadest nearer the base, and the seeds smaller and more coarsely tuberculate.

Stellaria prostrata, Baldw. At Guajuco, Nuevo Leon (77). Distinguished from the last by its annual root, more or less broadly ovate acute and usually smaller leaves, smaller and more glabrous calyx, and smaller seeds scarcely roughened on the sides.

Arenaria alsinoides, Willd. (*A. diffusa*, Ell. *A. lanuginosa*, Rohrb.) In the Sierra Madre, south of Saltillo (76), and near San Luis Potosi (135 Schaffner); 48 and 55½ Parry & Palmer. Also var. angustifolia, with leaves very narrowly linear (½ to 1 line wide), sometimes with broader ones at the lower nodes. A low form of this variety, with mostly simple 1– few-flowered stems and short pungent leaves, was collected at Saltillo. The species is very variable in its southwestern range, sometimes developing a diffuse regular dichotomously branched inflorescence.

Arenaria decussata, HBK. At Lerios, Coahuila (75), and in wet shady places near Morales (138 Schaffner); 61 Parry & Palmer.

Lepigonum * Mexicanum, Hemsl. (under the name *Spergularia*). In sandy places near San Luis Potosi (137 Schaffner); 52 Parry & Palmer. "Flowers pale yellow." Decidedly perennial, with a thick perpendicular root. The various forms in Schaffner's collection show that 58 Parry & Palmer ("*S. neglecta*?") is a stunted state of it.

Lepigonum rubrum, Fries. San Luis Potosi (137^b Schaffner).

Drymaria cordata, Willd. At Saltillo (79). Young specimens of what appears to be this species, distinguished by the rounded leaves, subtruncate at base, rarely at all apiculate at the rounded summit, the inflorescence lax and few-flowered, and the sepals ordinarily quite glabrous, 1 to 1½ lines long, acute and scarcely nerved. The stems are lax, from an annual root, at length rooting at the lower nodes.

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* This generic name is retained for the reasons that are given by Kindberg in his monograph of the genus. *Stipularia*, Haworth (1812), would strictly have precedence, but was long overlooked (even by Bentham & Hooker), and the name has been adopted for a Rubiaceous genus. *Lepigonum* was proposed by Fries in 1817. *Spergularia* was first taken up as a generic name by Presl in 1819.

Drymaria gracilis, Cham. & Schlecht. Stems very lax, from a perennial root, glabrous throughout: leaves cordate or deltoid-ovate, acute: inflorescence much branched and diffuse: sepals thin, nearly nerveless, acute or acutish, 1½ to 2 lines long. — San Luis Potosi (130 Schaffner, in part); Guanajuato (Dugès); also 57 Parry & Palmer, 21 and 2659 Bourgeau, 706 (?) and 710 Coulter.

Drymaria Fendleri. Annual; the erect or ascending stems and the petioles usually more or less pubescent: leaves broadly subreniform-cordate or the base sometimes truncate, acute or shortly acuminate: flowers on short pedicels and more or less fascicled, the pubescent and somewhat rigid sepals long-acuminate, distinctly 1–3-nerved, about 2 lines long. — From New Mexico and Arizona to Central Mexico; 60 Fendler (*D. cordata*, Gray, Pl. Fendl. 13); 866 Wright, also Thurber and Bigelow (*D. glandulosa*, Gray, Pl. Wright. 2. 18; Torrey, Pacif. R. Rep. 4. 70, and Bot. Mex. Bound. 37); Greene, 42 Rusby, and 510 Lemmon; near San Luis Potosi, 130 Schaffner, in part; Valley of Mexico, 552 (?) Bourgeau. Two other species of this group, more or less confounded with the preceding, may be characterized as follows: —

Drymaria villosa, Cham. & Schlecht. (*D. palustris*, Cham. & Schlecht.) Sparingly villous on the petioles, lower side of the leaves, and calyx: stems very lax and slender, from a slender rootstock, often rooting at the lower nodes: leaves subreniform-cordate, abruptly short-acuminate: inflorescence very lax and open: sepals thin-membranous, lanceolate, acute, 1 to 1½ lines long. — 944 Botteri; Sumichrast; cult. Hort. Kew.

Drymaria glandulosa, Bartl. (*D. ramosissima*, Schlecht.) Glandular-pubescent throughout: stems ascending or decumbent, from a stout rootstock: leaves triangular-ovate, acute or acuminate: inflorescence very diffuse: sepals rather rigid, lanceolate, acuminate, 1-nerved, 2 lines long. — 51 Parry & Palmer; 1308 Berlandier; Palmer (Carmen Island). The original of the species is described as an annual.

Drymaria suffruticosa, Gray, in herb. Suffrutescent at base, much branched, nearly a foot high, smooth and glaucous: leaves narrowly linear, 6 to 12 lines long: cymes few-flowered, terminal, the flowers large and reflexed: sepals ovate or rounded, 2½ lines long; petals included, fimbriately margined below, cleft above into several linear lobes: capsule broadly ovate: seeds surrounded by a conspicuous fimbriate crest. — At San Lorenzo de Laguna, Coahuila (74).

Drymaria polycarpoides, Gray. At the same locality (73, in part). Glaucous throughout: cymes terminal: seeds white and shining, almost transparent. Very distinct from the next.

Drymaria crassifolia, Benth. With similar glaucous foliage, but the internodes elongated and the slender pedicels fascicled in the axils: seeds nearly orbicular, dark brown, opaque. — Mixed with the last under the same number, in the Gray Herbarium set.

Drymaria nodosa, Engelm., and var. angustifolia, Hemsl. Near San Miguelito (140 Schaffner); 60 Parry & Palmer.

Drymaria arenarioides, Willd. (*D. frankenioides*, HBK.) Near Morales (139 Schaffner); 49 Parry & Palmer.

Drymaria xerophylla, Gray. Near Morales (131 Schaffner); 50 Parry & Palmer.

Cerdia purpurascens, DC. San Luis Potosi (128 Schaffner).

Cerdia glauca, Hemsl. In the Esculerillos Mountains (Schaffner); 63 Parry & Palmer.

Cerdia congestiflora, Hemsl. In mountains near San Luis Potosi (Schaffner); 63½ Parry & Palmer.

Achyronychia Parryi, Hemsl. At Lerios, Coahuila, a single specimen; 53 Parry & Palmer.

Portulaca pilosa, Linn. At Laredo, on the Rio Grande (2141), and about San Luis Potosi (771 Schaffner); 66 Parry & Palmer. Also a peculiar form, probably distinct, with a thick fleshy root, small narrow leaves, 1 to 3 lines long, and very hairy in the axils, smaller flowers, and lighter-colored seeds; in the San Miguelito Mountains (772 Schaffner).

Talinopsis frutescens, Gray. In San Luis Potosi Valley (773 Schaffner); 67 Parry & Palmer.

Talinum aurantiacum, Engelm. At Laredo, on the Rio Grande (2142), and San Luis Potosi (770 Schaffner); 68 Parry & Palmer.

Fouquieria splendens, Engelm. In the mountains east of Saltillo (80), and at San Lorenzo de Laguna, Coahuila.

Elatine Americana, Nutt. Near Morales (122 Schaffner).

Hypericum perforatum, Linn. At Sutherland Springs, Wilson Co., Texas (81).

Hypericum mutilum, Linn., var. (?) Leaves rounded to ovate-cordate, clasping; floral bracts narrowly linear: sepals very unequal, spatulate to oblong-oblanceolate, obtuse or acutish, 1½ to 2½ lines long, exceeding the ovate capsule: seeds acutish at each end, light-brown. — On Caracol Mountains, Coahuila (82). *H. philonotis*, Schlecht., is probably *H. mutilum*.

Hypericum denticulatum, HBK. About San Luis Potosi (607 Schaffner, in part); 72 Parry & Palmer.

Hypericum pauciflorum, HBK. Specimens which agree fairly with the original incomplete description of this species are collected by Dr. Schaffner, together with *H. denticulatum* and the following species. Parry & Palmer distributed it also with the next as n. 73, referred by Hemsley to *H. fastigiatum*, HBK. The whole plant is glaucous, the stem 4-angled, simple, 6 to 15 inches high; leaves from oblong-ovate or oblong-lanceolate below to linear above, ½ to 1 inch long; flowers few (3 to 12) in a terminal cyme, rather large, the lanceolate sepals 2 to 4 lines long, shorter than the petals; stamens about 50; styles 3 (rarely 4 or 5); capsule attenuate upward, exceeding the calyx.

Hypericum Schaffneri. Pale green, not glaucous; stems 4-angled, 6 to 18 inches high, branched above; leaves narrowly lanceolate, attenuate from a clasping base, ½ to 1 inch long; flowers numerous, often lateral along the elongated branches of the cyme; sepals linear, 1½ to 2 lines long, a little shorter than the narrow petals; stamens 5 to 10; styles very short; capsule oblong, acute or acutish, 2 to 2½ lines long. — Mountains near San Luis Potosi (607 Schaffner, in part); 73 Parry & Palmer, in part. Allied to *H. paniculatum* and *H. fastigiatum*.

Callirhoe involucrata, Gray. At Lerios, Coahuila (86). Also var. lineariloba, Gray, from the same locality (85).

Callirhoe pedata, Gray. In Burnet and Wilson counties, Texas.

Malvastrum tricuspidatum, Gray. At Uvalde, Texas (104).

Anoda hastata, Cav. (Including *A. cristata*, Schlecht.) At Soledad, Coahuila (106?), and near San Luis Potosi (159 Schaffner); 76, 77 and 78 Parry & Palmer.

Anoda parviflora, Cav. Near Morales (158 Schaffner). Most readily distinguished from the last by the densely stellate-pubescent fruit and yellow flowers.

Sida hederacea, Gray, var. With coarsely-toothed leaves. At San Lorenzo de Laguna, Coahuila (92).

Sida fasciculata, Torr. & Gray. At Sutherland Springs, Wilson County, Texas (91).

Sida diffusa, HBK. (*S. filiformis*, Moric.) Both the typical hairy form, from Sutherland Springs, Texas, and a rough-pubernlent variety, with broad-elliptical leaves, from Monclova, Coahuila (105); also in the San Miguelito Mountains (167 Schaffner); 87 and 89 Parry & Palmer. This name is adopted in the Kew list, and three seems to be no good reason for objection.

Sida Lindheimeri, Gray. Sutherland Springs, Texas (102).

Sida filipes, Gray. At Monclova, Coahuila (106).

Sida tragiæfolia, Gray. Mountains north of Monclova (103).

Sida physocalyx, Gray. At San Antonio, Texas (88), and at Parras, Coahuila (87). Two other undetermined species of this genus were collected by Schaffner in the San Miguelito Mountains (160) and near Morales (162).

Abutilon Texense, Torr. & Gray. A small-leaved form, from Laredo, on the Rio Grande (108). A variety (?) was collected by Dr. Palmer at Sutherland Springs, and has also recently been found by Dr. Havard in Western Texas, with large leaves roughish on the nerves beneath, paniculately many-flowered, the calyx roughish-pubescent and erect in fruit, and the carpels stellate-pubescent. In the ordinary form the calyx is reflexed in fruit.

Abutilon hypoleucum, Gray. At Monterey, Nuevo Leon (109), and a variety from Caracol Mountains, Coahuila, with the carpels less hispid (110).

Abutilon holosericeum, Scheele. At Soledad, Coahuila (111). Collected also at Monterey by Berlandier (148 and 1408) and by Eaton & Edwards. A variety (?), with the tomentum roughish throughout and the leaves less acuminate, was collected at Monclova, Coahuila (112).

Abutilon crispum, Don. In the San Miguelito Mountains (163 Schaffner).

Sphæralcea hastulata, Gray. At Saltillo (a solitary specimen), and in the San Miguelito Mountains (165 Schaffner). Also at Guadalupe, Texas, a variety with elongated pedicels (the same as 173 Berlandier), and in the mountains east of Saltillo a form with shorter ovate or oblong-ovate subhastate leaves (93). This species is distinguished from the next by its more slender habit, the several decumbent stems from a slender perennial rootstock, and by the larger calyx.

Sphæralcea angustifolia, St. Hil. The typical form of this species, as figured by Cavanilles (Icones, 1. 48, t. 68), is received from Dugès at Guanajuato, with large oblong-lanceolate leaves 3 to 5 inches long and extending nearly to the top of the stem, the large carpels rounded at the summit and not at all beaked, and their lateral walls obscurely or not at all reticulated. This is strictly Mexican, but does not appear in this collection, which includes instead several forms of the common polymorphous variety that ranges northward to

Colorado, the *S. stellata*, Torr. & Gray. This is marked especially by having the rather smaller carpels more or less rostrate, at least when young, and their sides strongly reticulated toward the base. It seems impossible, however, to draw a clear line between the two. The leaves are usually serrate and mostly somewhat hastately lobed; mountains near Saltillo (94, 95, 96, 98, 99, 100, 101), and at Monterey, Nuevo Leon. A form with entire and less undulate leaves was collected at Parras (97). The flowers vary in size, and in color from salmon to pink and magenta. It is popularly known to the Mexicans as "yerba del negro."

Pavonia lasiopetala, Scheele. (*P. Wrightii*, Gray.) At Uvalde, Texas (89), and a form with more acutely and deeply-toothed leaves at Monclova, Coahuila (90).

Malvaviscus Drummondii, Torr. & Gray. At San Antonio, Texas (115). Known as "May-apple," and the scarlet fruit eaten, both raw and cooked.

Hibiscus cardiophyllus, Gray. At Soledad, Coahuila (107).

Hibiscus Coulteri, Harv. At Saltillo, Coahuila (83).

Hibiscus denudatus, Benth., var. involucellatus, Gray. At Monclova, Coahuila (84). This is much the more common form.

Gossypium Barbadense, Linn. At San Lorenzo de Laguna, Coahuila (116). "Considered by some to be indigenous."

Hermannia Texana, Gray. At Juraz (113).

Melochia pyramidata, Linn. At Laredo, on the Rio Grande (117).

Ayenia microphylla, Gray. At Juraz, Coahuila (111).

Corchorus pilolobus, Link. At Guadalupe, Texas (119), and at Juraz, Coahuila (120.)

Tilia Mexicana, Benth. On Caracol Mountains, near Monclova, Coahuila (118).

Linum rupestre, Engelm. In the Sierra Madre, east and south of Saltillo.

Linum Greggii, Engelm. At Monterey, Nuevo Leon. A single specimen.

Linum rigidum, Pursh. At Monterey (122). More glaucous than *L. Berlandieri*, with narrower leaves and shorter calyx.

Linum Ciliata, Planch. At Guajuco, Nuevo Leon (121). Lower leaves very obtuse or slightly apiculate, only the uppermost glandular-toothed.

Linum lecheoides. Erect, leafy, hispid throughout, the stout purplish stems fastigiately branched toward the top, a foot high:

leaves sessile, narrowly oblong-lanceolate, acute, pubescent beneath, glabrous above, 4 to 6 lines long: corymbs few- (1–5-) flowered: sepals broadly ovate, acute, not ciliate, a line long or less; petals yellow, nearly twice longer: styles united at base: capsule ovate, acute, equalling the calyx. — In the San Miguelito Mountains, near San Luis Potosi (600 Schaffner).

Linum scabrellum, Planch. In the San Miguelito Mountains (603 Schaffner).

Linum Schiedeanum, Cham. & Schlecht. In the Morales Mountains (601 Schaffner); 1034½ Parry & Palmer.

Linum Mexicanum, Kunth. At Guanajuato (Dugès).

Malpighia glabra, Linn. On Corpus Christi Bay (157).

Galphimia angustifolia, Benth. (*G. linifolia*, Gray.) In mountains north of Monclova (128); 94 Parry & Palmer.

Hiræa Greggii. A shrubby climber, rather sparingly tomentose-pubescent: leaves opposite, ovate-elliptic, the uppermost oblong-ovate, very obtuse or acutish to abruptly short-acuminate, obtuse at base, somewhat pubescent beneath, roughish above, 6 to 18 lines long, the short petioles often 2-glandular: pedicels elongated: calyx glanduliferous; petals yellow, undulate-margined and somewhat erose: filaments short and stout, nearly equal, united to the middle: samara slightly pubescent, the lateral wings nearly semicircular, each an inch broad, distinct above and below, the dorsal one much smaller. — Near Monterey, Nuevo Leon (123), where it was also collected by Dr. Gregg in 1847.

Hiræa lilacina. A slender shrubby climber, somewhat pubescent with straight appressed hairs attached by the middle: leaves opposite, ovate to lanceolate, acute, rounded or cordate at base, on slender glandless petioles: pedicels opposite in terminal or axillary few-flowered racemes: calyx glanduliferous; petals "blue" or "lilac," entire or shortly fimbriate above: filaments slender, united only at base: samara hairy on the ventral side, orbicular-winged, the lateral wings together 9 lines broad, the dorsal much smaller. — On Caracol Mountains, south of Monclova (124); it has also been collected near Palomas (328 Gregg), and at Rinconada (Dr. Edwards).

Gaudichaudia filipendula, Juss., var. (?) San Luis Potosi (901 Schaffner), and at Guanajuato (Dugès); 95 Parry & Palmer.

Aspicarpa hyssopifolia, Gray. At Monclova and the neighboring Caracol Mountains; scanty specimens.

Aspicarpa Hartwegiana, Juss. In the Sierra Madre, south of Saltillo; scanty specimens.

Asclepias longipes, Gray. In the San Miguelito Mountains (902 Schaffner).

Janusia gracilis, Gray. In mountains north of Monclova (126).

Tribulus maximus, Linn. At Laredo, on the Rio Grande (131), and at Monclova, Coahuila (131ª).

Sericodes Greggii, Gray. The flowers are golden yellow and fragrant. At San Lorenzo de Laguna (63), and at Soledad (321).

Larrea Mexicana, Moric. A variety with the leaves mostly bifid at the apex. At Saltillo, Coahuila (132).

Porlieria angustifolia, Gray. At San Antonio, Texas (129), and in the Sierra Madre, south of Saltillo (130); 97 Parry & Palmer.

Geranium Carolinianum, Linn. In the mountains near Penasco, San Luis Potosi (190 Schaffner); 101 Parry & Palmer. Very nearly the usual form of the species, with hairs sometimes spreading, sometimes reflexed. 100 Parry & Palmer (the same as 389 Botteri and 273 Bourgeau), referred to this species, is probably a stout large-leaved form of the next.

Geranium Mexicanum, HBK. (*G. Hernandezii*, Engelm. in Gray's Pl. Fendl. 27, not DC.) San Rafael Mountains (188 Schaffner). Resembling the last, but with the more divergent lobes of the small leaves less narrowly dissected, hairs reflexed, the pedicels, calyx, and beaks of the fruit glandular-pubescent, and the calyx usually smaller.

Geranium Hernandezii, DC. In the San Miguelito Mountains (191 Schaffner). Well marked by the deltoid 3-lobed leaves, the long middle lobe lanceolate.

Geranium Schiedeanum, Cham. & Schlecht., var. More or less sparingly strigose-pubescent, the flowers sometimes yellowish-white. At Lerios, Coahuila (137), and in the San Rafael, San Miguelito, and Escabrillos Mountains (186, 187, 189 Schaffner): 99 Parry & Palmer.

Geranium crenatum. Stems short from a branching rootstock, little exceeding the radical leaves, and with the petioles covered with soft spreading hairs: leaves appressed-pubescent, about an inch broad, reniform-orbicular, about 5-cleft to below the middle, the broad lobes shortly 3–5-cleft at the rounded summit and somewhat crenately toothed: peduncles elongated, 2–5-flowered: calyx and pedicels villous and glandular-pubescent, the sepals (3 or 4 lines long) very shortly cuspidate; petals rose-color, 8 lines long: fruit erect, an inch in length. — At Lerios, Coahuila (136). The leaves resemble in outline those of *G. molle* and *G. Pyrenaicum*.

Oxalis corniculata, Linn. At Lerios (133), Saltillo (134), and Soledad, Coahuila (135); San Luis Potosi (761 Schaffner, in part).

Oxalis Wrightii, Gray. At San Luis Potosi (761 Schaffner, with the last). Closely resembling *O. corniculata*, but distinguishable by the thick fusiform root and usually more deeply-cleft leaflets.

Oxalis dichondræfolia, Gray. At Guadalupe, Texas (138).

Oxalis decaphylla, HBK. In the San Miguelito Mountains (762 Schaffner); 102 Parry & Palmer.

Peganum Mexicanum, Gray. At Parras (150); 105 Parry & Palmer.

Thamnosma Texanum, Torr. At Monclova (141) and Monterey (140); 104 Parry & Palmer.

Astrophyllum dumosum, Torr. In the mountains east of Saltillo (139). The well-developed petals are oblong-lanceolate, 4 lines long, glandular-punctate, and white or yellowish.

Xanthoxylum Pterota, HBK. At Guajuco, Nuevo Leon (195).

Xanthoxylum Clava-Herculis, Linn., var. (*X. macrophyllum*, Nutt.) With the leaves all trifoliolate. West of San Antonio, Texas (2125).

Ptelea angustifolia, Benth. At Saltillo, in flower (145), and in the mountains east of that place, in fruit (146).

Ptelea trifoliata, Linn., var. mollis, Torr. & Gray. At Georgetown and Bluffton, Texas (147, 148).

Helietta parvifolia, Benth. in Hook. Icon. Pl. t. 1385. At Monterey (142) and in the mountains north of Monclova (143, 144). Previously collected at Monterey by Berlandier (144 and 1404), and referred to *Ptelea parvifolia*, Gray (Hemsl. Bot. Centr.-Amer. 1. 170), which species rests upon Dr. Gregg's specimens only, collected on the Buena Vista battle-field and east of Marin.

Casimiroa edulis, Llav. & Lex. At Guajuco (149).

Castela Nicholsoni, Hook. At Laredo, Texas (152), and at Juraz, Coahuila; 107 Parry & Palmer.

Kœberlinia spinosa, Zucc. At Eagle Pass and Laredo, Texas (151), and at San Luis Potosi (94 Schaffner); 106 Parry & Palmer.

Cedrela ——? The lanceolate leaves with a long attenuate acumination, and the flowers in a close cymose panicle. At Guanajuato (Dugès).

Ilex decidua, Walter. At Georgetown, Texas (153, 154).

Schæfferia cuneifolia, Gray. At Uvalde, Texas (155), and westward toward Laredo.

Pachystima Myrsinites, Raf. In the Sierra Madre, forty miles south of Saltillo; a few specimens apparently of this species, though without flowers or fruit.

Leavia integrifolia, Hemsl. At Guajuco, Nuevo Leon (182), and in the mountains north of Monclova, Coahuila (183).

Mortonia scabrella, Gray. At Parras, Coahuila (2111).

Mortonia Greggii, Gray. A variety with narrow leaves and glabrous or nearly so (*M. Palmeri*, Hemsl.). In the Sierra Madre south of Saltillo (323); also in the mountains east of Saltillo, very sparingly. 558 Gregg is the same, though more pubescent. *M. effusa*, Turcz., founded on 2119 Berlandier, must also be *M. Greggii*.

Zizyphus obtusifolius, Gray. A variety with small coriaceous glaucous leaves, from ovate to narrowly oblong, occasionally toothed, and the inflorescence very pubescent. At Eagle Pass, Texas (168), and at San Lorenzo de Laguna, Coahuila (166).

Zizyphus lycioides, Gray. At Lerios, Coahuila (167).

Condalia spathulata, Gray. At Eagle Pass, on the Rio Grande (160, 161), and at Saltillo (162); 111, and 112 in part, Parry & Palmer.

Condalia obovata, Hook. At San Antonio (161) and Uvalde, Texas (163).

Condalia Mexicana, Schlecht. In the Morales Mountains (93 Schaffner) and in San Luis Potosi Valley (1060 Schaffner); 112, in part, and 113 Parry & Palmer.

Microrhamnus ericoides, Gray. At Lerios (165).

Karwinskia Humboldtiana, Zucc. At Laredo, on the Rio Grande (173), and on Corpus Christi Bay.

Rhamnus Caroliniana, Walter. Kendall County, Texas (172).

Adolphia infesta, Meisn. At Guanajuato (Dugès). This is probably the *Colletia (?) multiflora* of De Candolle.

Colubrina glomerata, Hemsl. (*Barcena Guanajuatensis*, Dugès, Rev. Cient. Mex. 1. 8. t.) At Guanajuato (Dugès).

Colubrina Greggii. An erect shrub, the branches pubescent: leaves oblong-ovate to lanceolate, acute or acuminate, subcordate at base, finely and acutely serrate, more or less rufous-tomentose beneath, less pubescent above, 2 or 3 inches long: peduncles axillary, bearing 1 to 3 pedicellate globose (drupaceous) capsules, 3 or 4 lines in diameter: seeds dark brown, shining, with an obscure protuberance on the back. — At Soledad, Coahuila (171), and at Monterey, Nuevo Leon (154 Gregg). The fruit much resembles that of *C. Texensis*; the carpels separating to the base through the calyx and dehiscent to

the middle, but with firmer walls; the seeds are less turgid and more shining.

CEANOTHUS AZUREUS, Desf. (*C. cæruleus*, Lag.) Locality uncertain (176); 118 and 119 Parry & Palmer.

CEANOTHUS DEPRESSUS, Benth. San Rafael Mountains (103 Schaffner); 122 Parry & Palmer, referred to *C. buxifolius*.

CEANOTHUS GREGGII, Gray. A variety with the leaves white-tomentose beneath, and occasionally with a few spinose teeth. At Lerios, Coahuila (175). Also the typical form from the Morales Mountains (102 Schaffner); 120 Parry & Palmer.

AMPELOPSIS PUBESCENS, Schlecht. At Guanajuato (Dugès).

VITIS INCISA, Nutt. At Laredo, on the Rio Grande (177).

VITIS ÆSTIVALIS, Michx. At Parras, Coahuila (180), and in the mountains near Saltillo (2126). — Also var. CINEREA, Engelm. (?), with different seeds from those of the preceding. Southwestern Texas (178).

VITIS CORDIFOLIA, Michx., var. (?) Covered throughout with a very short spreading pubescence, the leaves less acuminate and more bluntly toothed than in the typical form. In the Caracol Mountains, southeast of Monclova, Coahuila (179).

CARDIOSPERMUM HALICACABUM, Linn. At Uvalde (185) and at Sutherland Springs, Texas (366).

CARDIOSPERMUM MOLLE, Linn. At San Luis Potosi (100 Schaffner); 123 Parry & Palmer.

SERJANIA (?) INFLATA. Branches herbaceous, elongated, puberulent, the tendrils often not floriferous: leaves like those of *Cardiospermum Halicacabum*, somewhat pubescent: flowers in a small racemose panicle, bicirrhose at base: petals 3 lines long: ovary about equalling the pubescent style; capsule an inch long or more, glabrous, thin-membranous, resembling that of *C. Halicacabum*, but abruptly rounded above, and the carpels attenuate downward and wing-margined below the middle: seed solitary in each cell, attached to the middle of the axis. — In the Caracol Mountains, Coahuila (186). Closely allied to *S. macrococca*, Radlk., and *S. incisa*, Torr. (*Paullinia subulata*, Gray), and intermediate between *Serjania* and *Cardiospermum*. It would perhaps be better to refer all these species to the latter genus.

SERJANIA BRACHYCARPA, Gray. At Corpus Christi Bay (125).

SERJANIA RACEMOSA, Schum. At Guanajuato (Dugès).

UNGNADIA SPECIOSA, Endl. At Saltillo, Coahuila (187), and at Guajuco, Nuevo Leon.

SAPINDUS MARGINATUS, Willd. In Burnet County, Texas (184).

Acer grandidentatum, Nutt. In the Caracol Mountains, Coahuila, a single specimen of foliage only.

Negundo aceroides, Moench. At San Luis Potosi (88 Schaffner); "a very tall tree in cultivated places."

Dodonaea viscosa, Linn. At Monterey (127), and Guajuco, Nuevo Leon (181); San Luis Potosi (97 and 709 Schaffner); 96 Parry & Palmer.

Rhus Copallina, Linn., var. lanceolata, Gray. At Uvalde, and at Sutherland Springs, Texas (191).

Rhus microphylla, Engelm. At Sutherland Springs, Texas (193), at Saltillo, Coahuila (192), and in the San Miguelito Mountains (92 and 1061 Schaffner); 126 Parry & Palmer. A shrub 10 to 12 feet high, in the latter locality, popularly known as "Correosa."

Rhus rachyrrhachis, Hemsl. In the San Miguelito Mountains (95 and 908 Schaffner); 125 Parry & Palmer.

Rhus virens, Lindl. At Uvalde, Texas (188), in the Sierra Madre south of Saltillo (190), and in the Caracol Mountains, Coahuila (189).

Rhus Toxicodendron, Linn. At Uvalde, Texas (191); 121 Parry & Palmer.

Pistacia Mexicana, HBK. At Saltillo, Coahuila (196), and in the Morales, San Rafael and San Miguelito Mountains, San Luis Potosi (89, 90 and 91 Schaffner); 98 Parry & Palmer.

Crotalaria pumila, Ort. Near San Luis Potosi (814 Schaffner); 127 Parry & Palmer.

Crotalaria eriocarpa, Benth. In the same locality (813 Schaffner). 128 Parry & Palmer is the same, referred to *C. Mayparensis*, HBK., but the pod is densely tomentose-villous, instead of appressed silky-pubescent. 26 Ervendberg, referred to *C. anagyroides*, HBK., is rather *C. Mayparensis*.

Lupinus Ehrenbergii, Schlecht. At Lerios, Coahuila (197), and near San Luis Potosi (801 Schaffner), 132 Parry & Palmer. This is also 61 Hartweg, in part.

Lupinus bilineatus, Benth. (*L. Hartwegi*, Lindl.) At Guanajuato (Dugès). Known as "Elotitos" or "Yerba de San Marcos."

Lupinus Leonensis. Biennial (?), branching at the base and the leafy stems decumbent (6 to 12 inches high), coarsely villous throughout, the hairs appressed or somewhat spreading: petioles about twice longer than the leaves; leaflets 5, oblanceolate, acute, very silky below and on the margin, glabrous or nearly so above, 6 to 10 lines long or less; stipules linear-subulate, elongated: flowers blue, 5 lines

long, scattered in a short raceme, on slender pedicels 1 to 1½ lines long; bracts lanceolate, deciduous, shorter than the calyx: calyx-tube turbinate: pod linear, 4–6-seeded, 12 to 15 lines long by 3 broad. — At Guajuco, Nuevo Leon (198).

Melilotus parviflora, Desf. At San Lorenzo de Laguna, Coahuila (190).

Medicago minima, Lam. At Monterey, Nuevo Leon (200).

Trifolium amabile, HBK. At Morales, San Luis Potosi (806 Schaffner), a narrow-leaved form, the var. longifoliolum, Hemsl.; 134 Parry & Palmer.

Trifolium involucratum, Willd. In the mountains east of Saltillo, scanty specimens; at Morales (807 Schaffner); 135 Parry & Palmer.

Trifolium Schiedeanum. (*T. reflexum*, Schlecht. in Linnæa, 5. 576.) Perennial, cespitose and procumbent, pubescent: leaflets from cuneate-obcordate to oblanceolate or rhombic-oblong, 3 to 8 lines long: peduncles axillary, exceeding the leaves: heads without involucre; flowers rather few, pedicellate, becoming reflexed, 3 lines long: calyx villous-pubescent, the very narrowly attenuate teeth twice longer than the tube; corolla not inflated in fruit. — Jalapa (Schiede), and at Lerios, 45 miles east of Saltillo (201). Allied to *T. elegans* and *T. hybridum*.

Hosackia angustifolia, Don. In the Morales Mountains, San Luis Potosi (820 Schaffner); 140 Parry & Palmer.

Hosackia puberula, Benth. Near San Luis Potosi, in sandy places (819 Schaffner); 141 Parry & Palmer.

Psoralea rhombifolia, Torr. & Gray. At Corpus Christi Bay, Texas (223), and at Monterey, Nuevo Leon (222). Also a nearly glabrous variety, with the heads of larger bracteate flowers more open and subracemose; in the Sierra Madre, Coahuila (254).

Psoralea pentaphylla, Linn. Near San Luis Potosi, in sandy places (833 Schaffner); 142 Parry & Palmer. Known as "Contrayerba."

Eysenhardtia amorphoides, HBK. At Uvalde (204) and Sutherland Springs, Texas (203), in the mountains west of Saltillo (202) and at Soledad, Coahuila (2114), also at Guanajuato (Dugès).

Eysenhardtia orthocarpa. (*E. amorphoides*, var. *orthocarpa*, Gray, Pl Wright. 2. 37.) A tree, 10 to 15 feet high, distinguished from the last by the more numerous leaflets (10 to 23 pairs), and by the larger (5 to 8 lines long) straight pendent pods. — In New Mexico (98 and 116 Wright), Arizona (Pringle), near San Luis Potosi

(143 Parry & Palmer, 782 Schaffner); also 82 Bourgeau, 108 Bilimek, 15 and 230 Ervendberg, and collected by Seemann — all referred to the last species, which has 5 to 14 (usually 10) pairs of leaflets, and shorter (3 to 4 lines long) erect curved pods.

Dalea pogonathera, Gray. In Wilson County, Texas (221), at Monclova (216) and Soledad, Coahuila (220), and at Monterey, Nuevo Leon (219); 163 Parry & Palmer.

Dalea lasiathera, Gray. In the Caracol Mountains, Coahuila (225), and at Guajuco, Nuevo Leon (224).

Dalea tuberculata, Lag. At Saltillo, Coahuila (2113), in the San Miguelito Mountains, with white flowers (784 Schaffner), and in the mountains near San Luis Potosi, with purple flowers (783 Schaffner); 156, 157, 158 Parry & Palmer.

Dalea trifoliolata, Moric. (*D. triphylla*, Schlecht.) Near San Luis Potosi, in sandy places (795 Schaffner), and at Guanajuato (Dugès); 165 Parry & Palmer.

Dalea Berlandieri, Gray. In the Sierra Madre, south of Saltillo (209).

Dalea lasiostachys, Benth. Near San Luis Potosi, in shady woods (788 Schaffner); 149, 150, 155 Parry & Palmer.

Dalea leucostoma, Schlecht. At Lerios, Coahuila, a single specimen, and near San Luis Potosi (789 Schaffner); 153 Parry & Palmer.

Dalea ramosissima, Benth. In the San Miguelito Mountains (785 Schaffner); 151 Parry & Palmer.

Dalea alopecuroides, Willd. Near San Luis Potosi (791 and 1058 Schaffner), and at Guanajuato (Dugès); 144 Parry & Palmer.

Dalea pectinata, Benth. Near San Luis Potosi (790 Schaffner); 146 Parry & Palmer.

Dalea citriodora, Willd. Near San Luis Potosi (792 Schaffner); 145 Parry & Palmer.

Dalea aurea, Nutt. In the Caracol Mountains, Coahuila (226); a variety with the bracts more acuminate than in the typical form.

Dalea nana, Torr. In the Sierra Madre, south of Saltillo (228), at Monclova (227), and at Soledad, Coahuila (217), and at Monterey, Nuevo Leon (218).

Dalea leiophylla. Dwarf (6 inches high), frutescent, repeatedly branched and very leafy, covered throughout with a dense fine white tomentum: leaves trifoliolate, the oblong leaflets about a line long; petioles short: flowers in small dense terminal sessile heads: calyx very densely white silky-villous, 1½ lines long, the lanceolate

acuminate teeth as long as the tube; corolla rose-color, 3 lines long. — In the Sierra Madre, forty miles south of Saltillo (211). Allied to *D. Greggii*.

Dalea polycephala, Benth. In the same locality (208), also in the Escobrillos and San Rafael Mountains, San Luis Potosi (786 and 787 Schaffner); 160 Parry & Palmer.

Dalea Wrightii, Gray. In the Caracol Mountains, Coahuila (229); 162 Parry & Palmer.

Dalea Luisana. Perennial, herbaceous, the slender sparingly branched stems decumbent or ascending (2 to 6 inches long), covered throughout with an appressed silky pubescence: leaves few, trifoliolate: leaflets about equalling the petioles, linear-oblong, obtuse or acutish, glabrous above or nearly so, 3 to 9 lines long by 1 or $1\frac{1}{2}$ wide: flowers in close sessile heads (the rhachis at length 3 to 9 lines long); bracts silky, ovate, acuminate, equalling the very villous calyx: calyx-teeth filiform, bearded, exceeding the tube and equalling the yellow corolla (2 or nearly 3 lines long). — In the San Miguelito Mountains (808 Schaffner); it is also 164 Parry & Palmer, referred to *D. Wrightii*.

Dalea Greggii, Gray. At Monterey, Nuevo Leon (213); 147, 152 Parry & Palmer, and 1048, in part. 148 Parry & Palmer, with a part of 1048, referred to *D. pulchella*, is some other unrecognized species.

Dalea mollis, Benth. In the mountains north of Monclova (215); 161 Parry & Palmer.

Dalea frutescens, Gray. In Wilson County, Texas (207), in the Sierra Madre, south of Saltillo (206), and at Juraz, Coahuila (205), and at Monterey, Nuevo Leon (212). Also a variety with elongated loosely flowered spikes, the calyx slightly more pubescent, and the larger petals 4 to 6 lines long, changing from creamy white to pale rose-color; in the Caracol Mountains, Coahuila (210).

Dalea radicans. Frutescent, glabrous, much branched, the slender stems short and erect or elongated and trailing and occasionally rooting: leaves half an inch long or less, the leaflets (6 to 9 pairs) very narrowly linear, obtuse, 1 or 2 lines long: spike nearly sessile, open, few- (rarely 10-) flowered: calyx as in *D. frutescens*, villous in the throat, but the triangular teeth longer and more acuminate, half the length of the tube; corolla 3 lines long, magenta. — In the Sierra Madre, south of Saltillo (214). Nearly allied to *D. frutescens*.

Petalostemon obovatus, Torr. & Gray. Near San Antonio, Texas (230).

Indigofera Lindheimeriana, Scheele. At Uvalde, Texas (232), and in the mountains north of Monclova, Coahuila (233).

Indigofera leptosepala, Nutt. Near San Antonio (231), and in Wilson County, Texas (253). This is also 20 and 27 Ervendberg, referred to *I. subulata*. — Var. brevipes. With short peduncles not exceeding the leaves, and very short few-flowered racemes scarcely elongated in fruit, and the petals but little longer than the calyx-lobes; leaflets as in the typical form, 3 to 9, oblong-obovate to oblanceolate, pubescent on both sides. In the San Rafael Mountains (818 Schaffner); 138 and 139 Parry & Palmer. — Var. (?) angustata. Resembling the last variety in the shortness of the peduncle, but the leaflets narrower and more numerous (5 to 16), mostly linear, acute or obtuse, glabrous above. Near Morales (817 Schaffner).

Brongniartia intermedia, Moric. In the San Miguelito Mountains (828 Schaffner).

Peteria scoparia, Gray, var. glandulosa, Gray, in herb. Low (6 to 12 inches high or less), from a thick tuberous root, with numerous spreading branches, and the inflorescence very viscid pubescent (as in *P. Thompsonæ*): leaves 6 to 12 lines long; seeds numerous and more turgid. — Near San Luis Potosi (834 Schaffner); 172 Parry & Palmer. Probably distinct. The root is esculent, and known under the name of "Camote del monte."

Tephrosia tenella, Gray (?) At Soledad, Coahuila (257). Closely resembling this species, except that it appears to be perennial, the several herbaceous stems arising from a rather thick rootstock.

Tephrosia Lindheimeri, Gray. At Laredo, on the Rio Grande (258).

Sesbania macrocarpa, Muhl. At San Antonio (278, mainly).

Sesbania Cavanillesii, Watson. (*Daubentonia longifolia*, DC.) At San Antonio, Texas — fruit only, distributed with the last. 209 Parry & Palmer belongs to this species, not to *S. longifolia*, DC., which according to the description is very different.

Astragalus Humboldtii, Gray. At Lerios (240), at Parras (242), and in the Sierra Madre, south of Saltillo (241), the latter with somewhat shorter calyx-teeth; 170 and 171 Parry & Palmer.

Astragalus orthanthus, Gray. In the Sierra Madre, south of Saltillo (243, 2137).

Astragalus Brazoensis, Buckl. Between the Rio Frio and the Nueces, Texas (244).

Astragalus diphacus. Biennial or perennial, canescently puberulent: stipules distinct, lanceolate; leaves 2 to 4 inches long; leaflets

6 to 12 pairs, linear to narrowly oblong-lanceolate, obtuse, glabrous above, 3 to 8 lines long: racemes short and dense, 1 or 2 inches long in fruit, or less, on elongated peduncles: calyx campanulate, 2 lines long, the narrowly acuminate teeth little shorter than the tube; corolla whitish, 3 or 4 lines long: pod coriaceous, sessile, 2-celled, compressed-subglobose and somewhat didymous, 3 or 4 lines long, slightly pubescent, at length reticulately veined. — In the San Miguelito Mountains (816 Schaffner, mainly).

Astragalus Hartwegi, Benth. (*A. vaccarum*, Gray.) At San Lorenzo de Laguna, Coahuila (235).

Astragalus Nuttallianus, DC. At Monterey (237).

Astragalus leptocarpus, Torr. & Gray. At Monterey, a single specimen, and near San Luis Potosi (822 Schaffner); 176 Parry & Palmer.

Astragalus Arizonicus, Gray. At Parras, Coahuila (234). Stems more erect than usual.

Astragalus Greggii. Apparently biennial or perennial, the slender stems $\frac{1}{2}$ to 1 foot long or more, densely pubescent with white spreading or reflexed hairs: stipules triangular, surrounding the stem; leaves 1 to $1\frac{1}{2}$ inches long; leaflets 4 to 8 pairs, obovate to oblong, obtuse or truncate or retuse, tomentose-pubescent or nearly glabrous, 1 to 3 lines long: peduncles elongated, tomentose; raceme loosely few-flowered: calyx tomentose, the long-acuminate teeth exceeding the short campanulate tube; corolla 4 lines long, red and white: pod chartaceous, completely 2-celled by the intrusion of the dorsal suture, sessile, ascending or spreading, linear-oblong, compressed, slightly curved, glabrous, 6 to 9 lines long. — In the mountains east of Saltillo (238); also collected by Gregg (439), the locality not stated.

Astragalus strigulosus, HBK., var. gracilis, Hemsl. In the San Miguelito Mountains (821 Schaffner); 175 Parry & Palmer.

Astragalus parvus, Hemsl. Much larger specimens than the original, the ascending or erect stems a foot high or less; leaflets linear to linear-oblong, 2 to 6 lines long. In the San Miguelito Mountains (815 Schaffner); 174 Parry & Palmer.

Astragalus triflorus, Gray. In the San Miguelito Mountains (816 Schaffner, in part); 173 Parry & Palmer.

Astragalus Antonius. Biennial, canescent with short appressed pubescence, the slender ascending stems flexuous, $\frac{1}{2}$ to 1 foot high: leaves 2 or 3 inches long; leaflets 6 to 9 pairs, linear to narrowly oblong, obtuse, 4 to 6 lines long: peduncles elongated; racemes open, few-flowered: calyx pubescent, tubular-campanulate, 3 lines long, the

short acuminate teeth hardly half the length of the tube; corolla rose-color, 6 lines long; pod ascending, coriaceous, oblong-ovate and turgid, abruptly contracted to a very short stipe, 1-celled, with neither suture intruded or the dorsal slightly impressed, about 8 lines long, straight, subpubescent. — In the Sierra Madre, south of Saltillo (239), and also collected by Dr. Gregg (363) at San Antonio de las Alanganes. It belongs to the group *Scytocarpi*, and is apparently allied to *A. coriaceus*, Hemsl.

Nissolia Wislizeni. Gray. In the San Miguelito and San Rafael Mountains (793 and 794 Schaffner).

Nissolia platycalyx. Somewhat tomentose-pubescent: leaflets 2 or 3 pairs, oblong to oblong-obovate, obtuse or retuse, mucronate, 3 to 6 lines long; calyx-tube broadly campanulate, 2 to 2½ lines long, the filiform teeth nearly as long; corolla greenish yellow, 8 lines long, the standard pubescent: ovary glabrous at base, finely pubescent above: fruit glabrous or nearly so, 1–3-jointed, 1 to 1½ inches long, the joints rather strongly 3-costate on each side, the upper one with a curved wing 9 to 12 lines long by 5 or 6 lines broad, thickened on the dorsal edge. — In the mountains east of Saltillo (248, in part). Under the same number were distributed specimens of another unrecognized species, with the round-elliptical to ovate leaflets less pubescent, as well as the petioles, the calyx-tube only a line long, and the ovary and fruit pubescent and villous with scattered yellow hairs.

Stylosanthes mucronata, Willd. In the San Miguelito Mountains (800 Schaffner). Agreeing closely with this East Indian species, which differs from *S. procumbens*, Sw., in its pubescence, and in the form and size of the pod.

Zornia tetraphylla, Michx. Wilson County, Texas (245).

Zornia diphylla, Pers. At San Luis Potosi (805 Schaffner); 196 Parry & Palmer.

Desmodium viridiflorum. Beck. In the Caracol Mountains, Coahuila (246).

Desmodium psilophyllum. Schlecht. In the same locality (2136), a variety with broader leaves (1 to 6 lines wide) and verging towards *D. Wrightii*, Gray, which is very variable in its foliage, and apparently to be united with the present species.

Desmodium Palmeri, Hemsl. Near San Luis Potosi (796 Schaffner, in part); 179 Parry & Palmer, mixed with *D. Parryi* in the Gray Herbarium set.

Desmodium spirale, DC. Same locality (796 Schaffner, in part); 181 Parry & Palmer.

Desmodium Wislizeni, Engelm. With the preceding and distributed under the same number; the same as 180 Parry & Palmer. Differing from *D. spirale* in its perennial root and more or less abundant spreading pubescence.

Desmodium Parryi, Hemsl. In the San Miguelito Mountains (797 Schaffner, in part); 178 Parry & Palmer.

Desmodium gracile, Mart. & Gal. (?) With the last (797 Schaffner, in part). Flowering specimens, which agree fairly with the description.

Desmodium molliculum, DC. At San Rafael, in woods (798 Schaffner). Leaves varying from orbicular to ovate, and from half an inch to over 2 inches long.

Desmodium orbiculare, Schlecht. In the San Miguelito Mountains (799 Schaffner); 177 Parry & Palmer.

Lespedeza repens, Barton. At Sutherland Springs, Texas (250), and in the Caracol Mountains, Coahuila (249).

Vicia Americana, Linn., var. linearis, Watson. In the Caracol Mountains (247).

Vicia pulchella, HBK. At Lerios, Coahuila (2135), and in the San Rafael Mountains (823 Schaffner).

Lathyrus parvifolius. Glabrous throughout; stem rather stout, tall, not winged: stipules more or less broadly semisagittate; petiole tendril-bearing; leaflets 4 to 6 pairs, rhombic-oblong to ovate, acute, 6 to 12 lines long: peduncles exceeding the leaves, loosely 6–12-flowered: calyx-teeth triangular, much shorter than the tube; corolla purple, 6 to 8 lines long: pod sessile, linear, 2 inches long by about 3 lines broad. — In the San Miguelito Mountains, San Luis Potosi (812 Schaffner); 197 Parry & Palmer, referred to *L. venosus*.

Cologania humifusa, Hemsl. In the San Miguelito Mountains (803 Schaffner); 194 Parry & Palmer.

Cologania longifolia, Gray. At Lerios, Coahuila (251). The same as 189 Parry & Palmer, referred to *C. angustifolia*, from which it is distinguished only by the closely appressed pubescence and straight pod.

Cologania pulchella, HBK. In the San Miguelito Mountains (804 Schaffner); 192 Parry & Palmer.

Cologania Martia. Stems very slender, from a thick rootstock, trailing, a foot long or less, retrorsely strigose-pubescent: leaflets oblong (4 to 12 lines long by 2 to 4 wide), or the lower oblong-obovate or elliptical, glabrous above and strigose beneath, usually very obtuse or retuse: flowers purple, an inch long or more, on rather long pedi-

cels (3 to 15 lines), solitary or in pairs in the axils; calyx appressed-pubescent, half an inch long: pod nearly straight, an inch long. — In sandy places about San Luis Potosi (802 Schaffner). It is also 191 and 193 Parry & Palmer, the former number representing the cleistogamous form upon which Zuccarini founded the genus *Martia*. In this the flowers are nearly sessile, the petals wanting, and the calyx very much reduced.

Erythrina coralloides, DC. In mountains near San Luis Potosi (96 Schaffner). Known as "Colorin."

Apios tuberosa, Moench. At Sutherland Springs, Texas (2134).

Galactia brachystachys, Benth. At Saltillo, Coahuila (252).

Galactia marginalis, Benth. At Corpus Christi Bay, Texas; scanty specimens. The tuberous roots are said to be much relished as food.

Canavalia villosa, Benth. In the Caracol Mountains, south of Monclova (259).

Phaseolus atropurpureus, DC. In the mountains north of Monclova (262).

Phaseolus diversifolius, Pers. At Laredo, Texas (263).

Phaseolus retusus, Benth. Near San Luis Potosi, in sandy places (825 Schaffner); 185 Parry & Palmer. The root is described as tuberous, and the stems prostrate, 15 to 20 feet long.

Phaseolus heterophyllus, Willd. In the same locality (811 Schaffner, in part); 187 Parry & Palmer.

Phaseolus (Drepanospron) polymorphus. Stems from an esculent tuberous root, 3 feet long or more, glabrous or nearly so: leaves (usually ½ to 1 inch long, sometimes 2 or 3 inches long) hastately lobed (the lower rarely ovate), the terminal lobe from short-triangular (or sometimes obsolete) to oblong or linear, acute, the lateral short or elongated, obtuse or truncate or acute: pedunicles exceeding the leaves, few-flowered: bracts small; bractlets firm and persistent, ovate, nerved, a little shorter than the calyx; pedicels 1 or 2 lines long: petals greenish white, 3 or 4 lines long: pod 1½ inches long by 4 lines broad, 2–4-seeded. — About San Luis Potosi (811 Schaffner, mainly); also 186 and 188 Parry & Palmer. Much resembling *P. filiformis*, Benth., which is an annual, with smaller calyx and bractlets, and much smaller pods. It is similar also to *P. Wrightii*, Gray, which has, however, very narrow thin and deciduous bractlets.

Phaseolus (Drepanospron) scabrellus, Benth. in herb. Gray. Stem and petioles pubescent: stipules triangular; leaves 1 to 1½ inches long, scabrous above, more or less hastate (or sometimes

deltoid-ovate), truncate at base, acute, the middle lobe triangular to oblong, the basal rounded to quadrate: peduncles exceeding the leaves and with the inflorescence nearly glabrous; raceme open, the very slender pedicels 3 to 6 lines long; bracts and bractlets very small: corolla purplish, 5 or 6 lines long: ovary densely silky-pubescent; pod falcate, 1½ inches long by 4 lines wide.—In the Caracol Mountains, Coahuila (2122); also collected by Coulter in Sonora Alta (without number in herb. Gray).

Phaseolus multiflorus, Willd. (?) In the San Miguelito Mountains (824 Schaffner). Flowers scarlet; known as "Frijol del monte."

Phaseolus ———? At Soledad, Coahuila (261). Probably an undescribed species.

Rhynchosia Texana, Torr. & Gray. At Lerios, Coahuila (256), and in the San Miguelito Mountains (835 Schaffner); 190 Parry & Palmer. This species has been referred to the South American *R. Senna*, but the reason is not apparent.

Rhynchosia minima, DC. At San Antonio, Texas (260).

Rhynchosia macrocarpa, Benth. In the San Miguelito Mountains (826 Schaffner); 184 Parry & Palmer.

Rhynchosia phaseoloides, DC. In the Santa Maria del Rio Mountains (827 Schaffner).

Sophora sericea, Nutt. At Lerios, Coahuila (264); 199 Parry & Palmer.

Sophora secundiflora, Lag. At Uvalde, Texas (266), and at Monterey, Nuevo Leon (265), and a form, densely white-silky throughout, at Parras, Coahuila (2133); 200 Parry & Palmer.

Cæsalpinia Mexicana, Gray. At Monterey (282); 1054 Parry & Palmer. *C. exostemma*, DC., is very similar, but has a firmer calyx with broader lobes, and stamens nearly twice longer than the corolla.

Hoffmanseggia stricta, Benth. At Saltillo (267) and Parras, Coahuila (268), and near San Luis Potosi (832 Schaffner); 202 Parry & Palmer. The tuberous roots are edible, and known as "Camote del raton."

Hoffmanseggia gracilis. Herbaceous, low (about 4 inches high), very slender, puberulent but not glandular nor villous: pinnæ 1 to 3 pairs, with an odd one; leaflets 5 to 8 pairs, oblong, about 2 lines long, nearly glabrous: raceme loosely flowered: calyx finely puberulent: pod linear-oblong, very acute, slightly curved, 9 to 12 lines long by about 2 lines broad, 6–9-seeded.—In the Sierra Madre, south of Saltillo (275). Allied to *H. oxycarpa*.

Parkinsonia Texana, Watson. At Uvalde (270), and Eagle Pass, Texas (271).

Parkinsonia aculeata, Linn. At San Antonio, Texas (272); 203 Parry & Palmer.

Cassia leptocarpa, Benth. Near San Luis Potosi (830 Schaffner), and at Guanajuato (Dugès); 204 Parry & Palmer.

Cassia Roemeriana, Scheele. At Sutherland Springs (280).

Cassia pumilio, Gray. At Laredo, on the Rio Grande (273); 210 Parry & Palmer.

Cassia bauhinioides, Gray. At Monclova, Coahuila (274), and at San Luis Potosi (831 Schaffner); 206 Parry & Palmer. Also a villous and densely silky variety, with longer slender style, and the rather straighter pod with a longer beak; at San Lorenzo de Laguna (2134); 211 Gregg, from Saltillo, is the same.

Cassia Lindheimeriana, Scheele. At San Antonio (276).

Cassia occidentalis, Linn. At San Antonio (277), and at Guanajuato (Dugès), where it is known as "Bricho."

Cassia Vogeliana, Schlecht. In the Sierra Madre, south of Saltillo (281).

Cassia Wislizeni, Gray (?) Leaflets oblong-obovate, acute, 3 to 6 lines long: pods 4 to 6 inches long. In the Morales Mountains (829 Schaffner). Also from hills near Presidio, W. Texas (Dr. V. Havard), with the leaflets smaller but acute.

Cassia Greggii, Gray. At Soledad, in flower and in fruit (283).

Cassia Chamæcrista, Linn. At Sutherland Springs (279).

Bauhinia ramosissima, Benth. (?) At Monclova, Coahuila (285). Differing from Coulter's specimen, as described by Hemsley, in having its flowers only half as large and the ovary glabrous.

Cercis reniformis, Engelm. (*C. occidentalis*, Torr., var. *Texensis*, Watson.) In the Caracol Mountains, south of Monclova.

Prosopis cinerascens, Gray. Between the Rio Frio and Nueces, Texas (286), and at Juraz, Coahuila.

Prosopis juliflora, DC. At Eagle Pass, Texas (288), at Parras, Coahuila (287), and in the mountains near San Luis Potosi (629 Schaffner); 211 Parry & Palmer.

Neptunia pubescens, Benth. At Juraz, Coahuila (300), and at Corpus Christi Bay, Texas.

Desmanthus velutinus, Scheele. At Eagle Pass, Texas (315).

Desmanthus depressus, Humb. & Bonpl. At San Antonio and Laredo, Texas (316), and at Monclova, Coahuila (317).

Desmanthus reticulatus, Benth. At Sutherland Springs, Texas.

DESMANTHUS INCURVUS, Benth. At Parras, Coahuila (314), and in the Sierra Madre south of Saltillo. This is also 201 Parry & Palmer, referred to *D. depressus*.*

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* The North American species of *Desmanthus* may be grouped and distinguished as follows: —

* Stamens 5. — Glabrous or nearly so: pinnæ 2 to 8 (usually 5) pairs, on a rhachis ½ to 3 inches long; leaflets linear: pod not attenuate at base.

1. D. BRACHYLOBUS, Benth. Stout: heads many-flowered: peduncles 1 to 3 inches long: pod oblong, 2 or 3 lines broad, falcate. — Illinois and Florida to Texas and New Mexico.

2. D. LEPTOLOBUS, Torr. & Gray. Slender: heads small: peduncles ½ to 1 inch long: pod elongated linear, a line broad, straight, acuminate. — Arkansas and Texas.

* * Stamens 10. — Pod linear: leaflets oblong.

+ Pinnæ 2 to 6 (usually 4 or 5) pairs on a rhachis ½ to 1½ inches long; leaflets veinless.

++ Heads many-flowered, on short peduncles.

3. D. JAMESII, Torr. & Gray. Rather stout, glabrous, or slightly pubescent and the leaflets ciliate: peduncles usually approximate at the summit, occasionally in pairs: pod 1½ to 3 inches long by 1½ or 2 lines broad, acuminate, obtuse or but slightly narrowed at base. — S. Colorado and W. Texas to Arizona.

++ ++ Heads smaller, on peduncles 1 to 2½ inches long: pubescent or rarely nearly glabrous.

4. D. VELUTINUS, Scheele. Pod 1 to 2½ inches long by 1 or 1½ lines broad, acuminate, attenuate at base, straight or nearly so. — Texas.

5. D. INCURVUS, Benth. Pod 8 to 20 lines long by 2½ or 3 broad, acuminate, rounded or scarcely narrowed at base. — Mexico.

+ + Pinnæ 1 to 4 pairs: heads small.

++ Peduncles short (½ to 1 inch long): rhachis short (½ inch or less); pinnæ usually 1 or 2 pairs; leaflets veinless: pod 1 to 2½ inches long, acuminate, attenuate at base. — Species scarcely distinct.

6. D. DEPRESSUS, Humb. & Bonpl. Usually glabrous, low and depressed, very slender: leaflets small and narrow: pod straight or nearly so. — Florida to Texas, Mexico, etc.

7. D. VIRGATUS, Willd. Stouter and more erect: leaflets mostly larger and broader. — Florida, W. Indies and S. America.

8. D. ACUMINATUS, Benth. More pubescent: peduncles rarely over ½ inch long: pod 10 to 20 lines long, more or less curved. — Texas.

++ ++ Peduncles elongated (1 to 4 inches): leaflets veined: pod 1 to 1½ inches long, obtuse or slightly narrowed at base.

9. D. RETICULATUS, Benth. Glabrous or nearly so: rhachis ½ to 1½ inches long: peduncles usually 3 or 4 inches long: pod acuminate. — Texas.

10. D. OBTUSUS, Watson. Pubescent: rhachis usually very short (½ inch or less): peduncles 1 to 2½ inches long: pod obtuse, apiculate. — W. Texas.
(See p. 371.)

Mimosa malacophylla, Gray. At Monclova, Coahuila (299).

Mimosa monancistra, Benth. At Soledad, Coahuila (290).

Mimosa zygophylla, Benth. At Parras (296), and in the mountains east of Saltillo, Coahuila (297).

Mimosa acanthocarpa, Benth. In the mountains near San Luis Potosi (624 Schaffner, and 625 in part). This is the same as 217 Parry & Palmer (which is described by Hemsley as *M. flexuosa*, Benth.), with better developed and mostly larger leaves and leaflets. *M. flexuosa*, aside from its slender flexuous branches, differs in having its mature pods narrower (less than 2 lines broad) and armed with straighter spines.

Mimosa biuncifera, Benth., var. (?) In the mountains about San Luis Potosi (623 Schaffner); 216 Parry & Palmer, so referred by Hemsley. They also closely approach *M. Lindheimeri*.

Mimosa Lindheimeri, Gray, var. (?) The leaves with 1 to 3 pinnæ and few leaflets, as in 1363 Wright. At Uvalde, Texas (291), and at Saltillo, Coahuila, in flower (295). Also a variety with few but larger pinnæ and more numerous leaflets, and the broad pods obtuse; at Parras (292), and in the mountains east of Saltillo, in flower (293, 294).

Mimosa ———? At Parras were collected flowering specimens of another species of this group, with old fruit, but the foliage imperfectly developed. Pubescent, with small curved spines mostly in pairs: pinnæ 2 to 4 pairs, with 4 to 6 pairs of small leaflets: pod coriaceous, unarmed, pubescent, straight, ½ to 1 inch long by 2 lines broad.

Mimosa strigillosa, Torr. & Gray. At Juraz, Coahuila (2115).

Schrankia aculeata, Willd., var. (?) In the Sierra Madre south of Saltillo (301), and sparingly at Soledad, Coahuila, and at Sutherland Springs, Texas. Identical with 2513 Berlandier, so named by Bentham, but with the pod densely pubescent. The pod is long-beaked, instead of acute as described and figured from the original Vera Cruz specimens upon which the species was founded.

Schrankia subinermis. Glabrous, unarmed excepting the pod: pinnæ a single pair upon a petiole about an inch long; leaflets 6 to 10 pairs, oblong, veinless, slightly pubescent: peduncle 6 to 18 lines long: pod 2 inches long, beaked, glabrous, naked or very sparingly armed with short spines, chiefly on the margins. — In the mountains north of Monclova (302).

Leucæna glauca, Benth. At Saltillo (307)

Acacia Palmeri. A stout shrub, glabrous or nearly so, with short stout curved infrastipular and occasional scattered spines:

pinnæ 1 or rarely 2 pairs upon a rhachis 2 to 12 lines long; leaflets 2 to 5 pairs, oblong to oblong-obovate, 3 to 4 lines long: peduncles fascicled, an inch long: calyx glabrous, 1 to nearly 2 lines long, exceeding the narrow deciduous bractlet: ovary glabrous, stipitate. — In the Sierra Madre south of Saltillo (298). Allied to *A. Rœmeriana* and *A. micrantha*.

Acacia flexicaulis, Benth. At Corpus Christi Bay, Texas (305). Pinnæ always 2 pairs: spikes longer than in the next species and pedunculate: pod sessile upon a much-thickened branch-like peduncle.

Acacia amentacea, DC. Between the Rio Frio and Nueces, Texas (304); 213 Parry & Palmer. Pinnæ a single pair: spikes short and sessile: pod 2 or 3 inches long by 2 lines wide, attenuate into a stipe: spines very variable, sometimes short, often 1 to 2 inches long or more. Young fruit has recently been collected for the first time by Dr. V. Havard, U.S.A., and Dr. S. B. Buckley. This is said to be the most common species in Southwestern Texas, and to grow to a height of twenty feet.

Acacia Wrightii, Benth. At Uvalde, Texas (303).

Acacia Berlandieri, Benth. At Eagle Pass, Texas (2127), at Monterey, Nuevo Leon (308), and in the mountains east of Saltillo (309). A variety was collected at Eagle Pass (2127, in part) with narrower pods (6 to 8 lines wide) and smaller seeds (3 or 4 lines long). The ordinary form has the pod 9 to 14 lines broad and the seeds 5 or 6 lines long.

Acacia constricta, Benth. At Parras, Coahuila (313), and in the mountains near Los Pogos (627 Schaffner); 214 Parry & Palmer.

Acacia filicina, Willd. At Parras (311), Juraz (310), and in the Caracol Mountains, Coahuila (2128), and at Sutherland Springs, Texas; 218 Parry & Palmer.

Acacia Farnesiana, Willd. In the Sierra Madre south of Saltillo (312). Known by the Mexicans as "Huisache."

Acacia crassifolia, Gray. At San Lorenzo de Laguna, Coahuila (284). The pod is very thick and coriaceous, 3 inches long by 8 lines broad, nearly annular and shortly stipitate

Calliandra conferta, Benth., but with slender peduncles. In the mountains east of Saltillo (318), and in the Morales Mountains (626 Schaffner).

Calliandra eriophylla, Benth., but with the fruiting peduncles short. At Saltillo, sparingly collected; the same as 212 Parry &

Palmer, referred to *C. conferta*. It appears most probable, however, that the two species cannot be kept distinct.

Calliandra Coulteri. Stems herbaceous, very slender, glabrous, about a foot long: stipules herbaceous, lanceolate, 2 lines long; pinnæ 1 or 2 pairs on a rhachis ½ to 1½ inches long; leaflets 6 to 10 pairs, oblong, 2 to 4 lines long: peduncles 1 or 2 inches long: flowers sessile; calyx and corolla glabrous, short; stamens pink: pod glabrous, 1½ inches long. — At Soledad (2129); collected also by Coulter, without number or locality.

Pithecolobium Palmeri, Hemsl. In the San Miguelito Mountains (625 Schaffner, in part); 220 Parry & Palmer. The pod is stipitate, 3 or 4 inches long or more.

Pithecolobium brevifolium, Benth. In the mountains north of Monclova (306).

Pithecolobium (Chloroleucon) elachistophyllum, Gray, in herb. A rigid much-branched shrub, armed with numerous short rather slender and somewhat curved spines, glabrous: pinnæ a single pair upon a petiole 1 or 2 lines long; leaflets 2 to 4 pairs, oblong-obovate, reticulated, 1 or 2 lines long: peduncles axillary, solitary, a line long, longer and much thickened in fruit; heads globose, rather open: flowers 2 lines long, the very numerous filaments 4 or 5 lines long, united into a slender tube: pod thick-coriaceous, 2 inches long by nearly ½ inch wide, stipitate. — At Monterey, Nuevo Leon (289).

Pithecolobium (Chloroleucon) Schaffneri. A stout shrub, armed with infrastipular pairs of short stout straight spines, finely pubescent: pinnæ 2 to 4 pairs on a rhachis 3 to 10 lines long, with a round gland at the base of the upper and lower pairs; leaflets 10 to 15 pairs, oblong, acute, 1 to 1½ lines long: peduncles solitary, slender, ½ to 1 inch long: heads dense, globose, nearly glabrous: filaments numerous, united at base, 4 lines long: pod linear, straight or somewhat curved, 3 to 5 inches long by 4 or 5 lines wide, densely pubescent, flattened, thick and indehiscent, with a resinous endocarp and spongy septa between the seeds. — In the mountains about San Luis Potosi (628 Schaffner, and 623 in part); 219 Parry & Palmer, referred by Hemsley to *Acacia*, the flowers being unknown.

Prunus Capuli, Cav. At Sutherland Springs, Texas (319[2]), in the Sierra Madre south of Saltillo (320), in the mountains about San Luis Potosi (106 Schaffner), and at Guanajuato (Dugès); 222 Parry & Palmer. Popularly known as "Capulin."

Prunus glandulosa, Torr. & Gray. In the Sierra Madre south of Saltillo (2131).

PRUNUS MEXICANA. Young branches, pedicels and petioles canescent with a short dense subtomentose pubescence: leaves deciduous, oblong-lanceolate or lanceolate, acuminate, rounded at base, acutely toothed, pubescent and lighter-colored beneath, puberulent above, 2 or 3 inches long: pedicels short, fascicled: fruit compressed-ovate, the very thick turgid stone 7 or 8 lines long, rounded on the margins, acutish. — At Lerios, Coahuila (2130).

SPIRÆA DISCOLOR, Pursh, var. DUMOSA, Watson. In the San Rafael Mountains (104 Schaffner); 223 Parry & Palmer.

VAUQUELINIA CORYMBOSA, Corr. In the Sierra Madre south of Saltillo (329).

LINDLEYA MESPILOIDES, HBK. In the same region (324).

RUBUS TRIVIALIS, Michx. (*R. humistratus*, Steud.) In the mountains about San Luis Potosi (105 Schaffner), the stem described as 20 to 30 feet long; 224 Parry & Palmer. The species is very variable in the amount of pubescence.

CERCOCARPUS PARVIFOLIUS, Nutt. At Lerios, Coahuila (174). Also var. PAUCIDENTATUS, with the small leaves entire or sparingly toothed at the summit, often densely pubescent; in shady places near San Miguelito (114 Schaffner). This is the same as 224 Parry & Palmer, and 1056 Wright. The typical form has occasionally a similar pubescence.

COWANIA PLICATA, Don. In the Sierra Madre south of Saltillo (325); 226 Parry & Palmer.

COWANIA MEXICANA, Don. At Guanajuato (Dugès).

FRAGARIA MEXICANA, Schlecht. At Lerios, Coahuila (326).

POTENTILLA HEPTAPHYLLA, Mill. In the Caracol Mountains, Coahuila (327).

POTENTILLA NORVEGICA, Linn. At San Lorenzo de Laguna, Coahuila (328); a form with the leaflets frequently divided.

ALCHEMILLA SIBBALDIÆFOLIA, HBK. In the Morales Mountains (868 Schaffner); 227 Parry & Palmer.

ALCHEMILLA HIRSUTA, HBK., var. ALPESTRIS, Schlecht. Villous with long scattered and spreading silky hairs, the leaves alike on both sides, and the calyx wholly glabrous. In the San Miguelito Mountains (869 Schaffner). This variety, and the more typical form (var. *campestris*, Schlecht., having the hairs appressed and more numerous, especially on the under side of the leaves, on the stem and calyx), have been distributed together under 721 Parry & Palmer, 71 Coulter (referred to *A. tripartita*), and 82 Ghiesbreght. 308[3] Bourgeau, also referred to *A. tripartita*, is the present variety. The lobes of the

leaves vary greatly in their division, from incisely toothed to very deeply cleft.

Alchemilla velutina. Perennial, with numerous decumbent or ascending branching stems, the stems and branches appressed villous: leaves glabrous or sparingly villous, cuneate, 3-cleft, 2 to 5 lines long, the segments entire or 1–3-toothed; stipules entire or usually of two narrowly oblong lobes: flowers very small, the calyx covered with a fine velvety pubescence. — In swampy places about San Luis Potosi (870 Schaffner).

Rosa Mexicana. Low (about a foot high), armed with straight rather slender spines (1 to 5 lines long): stipules glandular-ciliate, and the rhachis of the leaves with short stout spreading gland-bearing hairs and prickly; leaflets 5 to 7, narrow, mostly acute at each end, doubly serrate, slightly pubescent and glandular beneath, 4 to 10 lines long: flowers solitary, 1½ inches in diameter: calyx-lobes glandular-hairy, at length deciduous, the tube glabrous or very nearly so: fruit globose, 3 or 4 lines in diameter. — In the Caracol Mountains, Coahuila (2121). Allied to *R. parviflora*.

Crataegus pubescens, Stend. A form with broadly flabelliform or rhomboidal leaves. In the mountains east of Saltillo (2123). The Mexican species of this genus are somewhat obscure, but this appears distinguishable from *C. Mexicana* by its generally acuter and more acutely toothed leaves, which are less coriaceous when old. 50 Bourgeau ("*C. Crus-galli*") is *C. Mexicana*, as also 228 Parry & Palmer.

Cotoneaster denticulata, HBK. In the Sierra Madre south of Saltillo (330); 230 Parry & Palmer.

Philadelphus serpyllifolius, Gray. A variety with the leaves for the most part less densely pubescent beneath, similar to 1101 Wright. In the Sierra Madre south of Saltillo (2122 *). The species is more nearly related to *P. microphyllus* than to *P. Mexicanus*.

Tillea angustifolia, Nutt. Near Morales, San Luis Potosi (126 Schaffner); 680 Parry & Palmer.

Cotyledon Schaffneri. Acaulescent, the basal leaves narrowly lanceolate, narrowing from near the middle each way and acuminate, 3 or 4 inches long by ½ inch wide, somewhat purplish; cauline leaves rather numerous, linear, flattened, very acute, 1 to 1½ inches long: flowering stem a foot high, bearing a 2-branched raceme (the branches 4 inches long and about 8–12-flowered); pedicels very short: sepals narrowly lanceolate, unequal, 2 to 5 lines long; corolla yellow and pink, 6 to 8 lines long, nearly twice longer than the carpels. — On sandy slopes of mountains around San Luis Potosi (768 Schaffner).

Cotyledon ——— ? A somewhat similar apparently undescribed species, but the material insufficient for determination. From the same region (769 Schaffner); it was also distributed under 233 Parry & Palmer, together with specimens of still another species with broader leaves and the shortly calyculate flowers on long slender pedicels.

Cotyledon parviflora, Hemsl. In the San Miguelito Mountains (775 Schaffner).

Sedum Palmeri. Caulescent, erect and branching, glabrous and glaucous: leaves thick, flattened, spatulate-obovate, 1 to 1½ inches long by 9 lines broad (3 lines broad at base), rounded at the summit and slightly apiculate: branches slender, bearing clustered racemes (4 to 6) an inch or two long: flowers deep orange, on short pedicels, the narrowly lanceolate petals (2 or 3 lines long) but little exceeding the sepals: carpels short, about as long as the slender styles. — At Guajuco, Nuevo Leon (2121), and in cultivation at Cambridge. Resembling *S. dendroideum*, but of more slender habit and the flowers pedicellate.

Sedum ebracteatum, DC. In the Morales Mountains (774 Schaffner).

Sedum fuscum, Hemsl. In the San Rafael Mountains (778 Schaffner); 235 Parry & Palmer.

Sedum parvum, Hemsl. In the Morales Mountains (777 Schaffner); 234 Parry & Palmer.

Sedum Liebmannianum, Hemsl. Near San Miguelito (776 Schaffner).

Ammannia latifolia, Linn. At Sutherland Springs (331).

Cuphæa æquipetala, Cav. In the San Miguelito Mountains (722 Schaffner), and at Guanajuato (Dugès); 241 and 242 Parry & Palmer.

Cuphæa lanceolata, Ait. f. (*C. Zimapani*, Roezl.) In the Morales Mountains (721 Schaffner), and Guanajuato (Dugès).

Lythrum gracile, Benth. At Monterey (332), and near Morales (653 Schaffner); 245 Parry & Palmer. Typical *L. alatum*, Linn., has not been collected in Mexico. L. Kennedianum, HBK. (40 and 299 Bourgeau, 142 Coulter, 243 Parry & Palmer, &c.), which has been referred to it, is distinguished especially by its longer calyx (5 to 6 lines long), and the upper leaves less reduced. 158 Ghiesbreght, from Chiapas, is L. alatum, var. lanceolatum, Torr. & Gray, and 140 Coulter (referred to *L. Hyssopifolia*, Linn.) is var. linearifolium, Gray, collected also by Gregg at Andabago. *L. Hyssopifolia*

is found in California (V. Rattan and G. R. Vasey), but there are no Mexican specimens in the Gray herbarium.

Nesæa longipes, Gray. At Parras, Coahuila (333), where it was also collected by Gregg.

Nesæa salicifolia, HBK. Near San Luis Potosi (654 Schaffner); 246 Parry & Palmer.

Jussiæa repens, Linn., var. Californica, Watson. With mostly spatulate leaves, smaller flowers and short pedicels. At Parras (334), and near Morales (173 Schaffner, together with the typical form). 247 Parry & Palmer and 183 Coulter are the same.

Jussiæa suffruticosa, Linn. Near Morales (174 Schaffner).

Ludwigia palustris, Linn. Near Morales (127 Schaffner).

Œnothera Drummondii, Hook. In and near salt water at Corpus Christi Bay, Texas (343), with the leaves subhyrate-pinnatifid.

Œnothera macrosceles, Gray. At Parras, Coahuila (338). Fruiting specimens, at length collected, determine the position of this species in the *Onagra* group, where it was originally placed. The capsules are about an inch long, straight or somewhat curved, obtusely tetragonal, 1½ lines in thickness, the seeds nearly smooth or obsoletely pitted.

Œnothera sinuata, Michx. Around San Rafael (172 Schaffner); 253 Parry & Palmer. Also the var. hirsuta, Torr. & Gray, at Corpus Christi Bay, Texas (345).

Œnothera speciosa, Nutt. In the mountains east of Saltillo (339) and in the Caracol Mountains, Coahuila (336), and near Monterey, Nuevo Leon (335, mainly); 252 Parry & Palmer. *Œ. hirsuta* and *Œ. Berlandieri*, Walp., (*Xylopleurum*, Spach), are mere forms of this species.

Œnothera tetraptera, Cav. A variety with small flowers, the calyx-tube 3 to 6 lines long, and the fruit 6 to 8 lines long including the short pedicel, from Monterey, Nuevo Leon (347). 250 Parry & Palmer is the same in part, there being with it a somewhat more villous form with larger flowers, the calyx-tube an inch long, and the fruit (5 lines long) sessile or nearly so (169 Schaffner, San Luis Potosi). With 335 Palmer, in the Gray herbarium, is a low form villous throughout with spreading hairs, even to the calyx-lobes, with larger flowers, the pedicel short and calyx-tube 6 lines long. A doubtful form was collected in the Sierra Madre south of Saltillo (340), with large flowers, the calyx-tube an inch long, and the pedicelled fruit about an inch long and attenuate at top. It is difficult to define the limits of this and the preceding species, or to draw a clear

line between them. It would seem that this species is always more or less villous, and the capsule larger and more broadly winged and more abruptly contracted at top. The calyx-tube is usually shorter in proportion to the ovary, and the capsule with its pedicel often 1 to 1½ inches long.

ŒNOTHERA ROSEA, Ait. At Monterey, Nuevo Leon (346), in swampy places near Morales (170 Schaffner), and Guanajuato (Dugès), where it is called "Yerba del Golpe."

ŒNOTHERA BRACHYCARPA, Gray. At Saltillo (2120), and a form with extremely narrow leaves (342). This species appears to include *Œ. Wrightii*, Gray.

ŒNOTHERA (MEGAPTERIUM) DISSECTA, Gray, in herb. Stems slender, herbaceous, from an underground rootstock, branching, decumbent or erect, sparingly pubescent: leaves narrow, 1 or 2 inches long, pinnatifidly lobed, the linear lobes very unequal: flowers axillary, sessile, the calyx-tube 1½ inches long, slightly dilated above, the tips free in the bud; petals rose-color, an inch long: capsule oblong-ovate, narrowed at each end, half an inch long, strongly winged at least toward the top and with a prominent thick rib between the wings. — In sandy localities near San Luis Potosi (168 Schaffner); 249 Parry & Palmer.

ŒNOTHERA HARTWEGI, Benth. In the mountains east of Saltillo (337, 341), and at Saltillo a form with somewhat smaller flowers (344). At Lerios a low form was sparingly collected, with linear leaves, and nearly corresponding to the variety *lavandulæfolia*. 248 Parry & Palmer is a similar but still more reduced form with small flowers.

LOPEZIA PUMILA, Bonpl. In the mountains near San Luis Potosi (640 Schaffner), and at Guanajuato (Dugès). The smaller specimens from the latter locality accord with the original description. The much larger ones from Dr. Schaffner are still more pubescent, and with leaves an inch long or more.

LOPEZIA TRICHOTA, Schlecht. (?) In swamps about San Luis Potosi (641 Schaffner), and at Guanajuato (Dugès); 256 Parry & Palmer. Not agreeing wholly with the description of the original specimens, which were found in rocky localities. The herbaceous stems are from a very thick perennial root, the lower leaves opposite, broadly ovate, rounded or subcordate at base, obtuse or acutish, obsoletely toothed, the upper oblong-ovate to lanceolate, acute and more acutely toothed; the narrow petals and the style pilose, the stamens glabrous.

GAURA PARVIFLORA, Dougl. At Saltillo (2119).

Gaura Drummondii, Torr. & Gray. At Laredo, Texas (348).

Gaura coccinea, Nutt. About San Luis Potosi (171 Schaffner); a narrow-leaved and a broader-leaved form, the same as 254 and 255 Parry & Palmer.

Stenosiphon virgatus, Spach. At Sutherland Springs (349).

Cevallia sinuata, Lag. At Uvalde, Texas, and at Saltillo, sparingly; at Parras, Coahuila (360), at Monterey, Nuevo Leon (361), and at San Lorenzo de Laguna a form with broader sinuately toothed leaves (362); 258 Parry & Palmer.

Petalonyx crenatus, Gray, in herb. Suffruticose, low, the short herbaceous branchlets leafy and densely retrorse-hispid: leaves oblong-lanceolate, sessile, 2 to 4 lines long, densely covered with short barbed hairs, the crenate margins revolute: flowers white, in open terminal naked racemes, each flower involucrate with three unequal toothed bractlets at the summit of the short slender pedicel: calyx-lobes linear, hispid, recurved; petals narrowly linear, not connivent, 2 lines long: filaments and style a half longer. — At San Lorenzo de Laguna, Coahuila (833).

Eucnide lobata, Gray. At Monterey, Nuevo Leon (356). This species has the leaves rather strongly lobed, with acute or acutish teeth, the inflorescence short (2 or 3 inches or less) with leaf-like toothed bracts, the calyx-lobes about 2 lines long, stamens about 60, and the oblong-ovate capsule narrowed at base. 1067 Parry & Palmer is apparently distinct, the scant specimen in the Gray herbarium showing a very short campanulate calyx and few (25 or less) stamens. The genus is clearly distinct from *Mentzelia*.

Eucnide floribunda. Stout, a foot high or more, the round-cordate leaves (1½ to 2½ inches long) slightly lobed and bluntly sinuate-toothed: inflorescence 6 to 8 inches long, with lanceolate entire bracts acute at each end: calyx-lobes 3 or 4 lines long, nearly equalling the petals: stamens very numerous (100 or more): capsule broadly campanulate, rounded at base. — At San Lorenzo de Laguna (832). Resembling *E. lobata*.

Eucnide bartonioides, Zucc. At Guajuco, Nuevo Leon (354), and at Monclova, Coahuila (355), growing on rocks at the mouth of caves. The calyx-tube in this species is villous, with the barbed pubescence very short or usually wanting, the lobes 3 to 8 lines long. Eucnide sinuata, collected by Botteri (266, in herb. Gray, without locality), is very similar, but with the leaves sinuately lobed, the obtuse lobes entire or sparingly toothed: calyx tube densely covered with barbed hairs, the villous lobes 3 or 4 lines long.

MENTZELIA ASPERA, Linn. At Soledad (351), and in the mountains north of Monclova (831). Distinguished from the next by the annual root, smaller flowers, and longer and narrower capsule.

MENTZELIA HISPIDA, Willd. (*M. strigosa*, HBK.) At Monclova (352), Soledad (353), and in the Caracol Mountains (357); also in the mountains about San Luis Potosi (110 Schaffner), and at Guanajuato (Dugès); 257 Parry & Palmer. The root is tuberous.

MENTZELIA MULTIFLORA, Nutt. At Saltillo (350, 2105), and at San Lorenzo de Laguna (358, 359); several forms, varying in foliage, size and color of the flowers, and length of the capsule. *M. Wrightii* appears to differ only in the more shallow lobing of the leaves.

TURNERA APHRODISIACA, Ward. In the San Miguelito Mountains (166 Schaffner); 93 Parry & Palmer. Known as "Yerba de Vemulo." Frequently with 4 styles and a 4-valved 8-seeded capsule.

PASSIFLORA FŒTIDA, Linn. At Laredo, Texas (2110).

PASSIFLORA TENUILOBA, Engelm. At Sutherland Springs, Texas.

PASSIFLORA BRYONIOIDES, HBK. Near San Luis Potosi (109 Schaffner); 259 Parry & Palmer.

CUCUMIS ANGURIA, Linn. At Uvalde, Texas (363).

CUCURBITA FŒTIDISSIMA, HBK. (*C. perennis*, Gray.) In the mountains near San Luis Potosi (765 Schaffner); known as "Calabazilla loco."

APODANTHERA UNDULATA, Gray. About San Luis Potosi (766 Schaffner); called "Melon loco," and the root is said to be esculent.

MAXIMOWICZIA TRIPARTITA, Cogn. At Uvalde, Texas (365), and at Laredo, on the Rio Grande (364). This species differs from *M. Lindheimeri*, Cogn. (*Sicydium Lindheimeri*, Gray; 260 Parry & Palmer), in its more narrowly lobed leaves, in the shorter campanulate tube of the calyx, in the rather smaller and more obtuse fruit, and in the narrower seeds. The var. *tenuisecta* of *M. Lindheimeri* should rather be referred to this species.

CYCLANTHERA DISSECTA, Arn. (*C. Naudiniana*, Cogn.) At Uvalde, Texas (367), and at Guanajuato (Dugès). The characters upon which Cogniaux separates his *C. Naudiniana* appear to be all unreliable.

SICYOS DEPPEI, Don. About San Luis Potosi (767 Schaffner), and at Guanajuato (Dugès), known as "Chayotillos." Closely resembling *S. angulatus*, Linn., and distinguished mainly by the smaller (3 or 4 lines long) and less villous-tomentose fruit. 397 Lindheimer, as well as 971 and 2401 Berlandier, from Texas, must be the same, though referred to *S. angulatus* by Cogniaux.

Sechiopsis triquetra, Naud. In the Cerro del Cuarto, near Guanajuato (Dugès).

Mamillaria conoidea, DC. At Saltillo (378).

Mamillaria micromeris, Engelm. At Saltillo.

Mamillaria radians, DC. In the mountains west of Saltillo. Several other undetermined species were sparingly collected.

Echinocactus longehamatus, Gal. At Saltillo (373, 374).

Echinocactus pilosus, Gal. In the mountains east of Saltillo (375).

Echinocactus horizonthalonius, Lam. At Saltillo (380).

Echinocactus bicolor, Gal. (?) At Saltillo (379).

Cereus cinerascens, DC. At San Lorenzo de Laguna (368, 369), Parras (370, 371), and Saltillo (372), some with larger spines than any described; 368 is doubtful; 277 Parry & Palmer.

Opuntia Kleiniæ, DC. At San Lorenzo de Laguna (376).

Opuntia imbricata, DC. At Parras (377).

Mollugo Cerviana, Ser. At Bluffton, Texas (381). This species has been recently collected also in New Mexico and Arizona.

Mollugo verticillata, Linn. Western Texas (382); San Luis Potosi (118 Schaffner); 283 Parry & Palmer.

Glinus Cambessidesii, Fenzl. At San Lorenzo de Laguna (72). With smaller flowers and much smaller seeds and generally less pubescent than *G. lotoides* of the Old World, to which the Mexican specimens are referred by Hemsley. The strophiolate seeds with elongated funicles, together with some peculiarities of habit, rather justify the retention of the genus.

Hydrocotyle prolifera, Kellogg. At Georgetown, Texas (383). The same as 107 Coulter and 1068 Parry & Palmer (referred to *H. interrupta*), and 480 Bourgeau.

Eryngium nasturtiifolium, Juss. At San Lorenzo de Laguna (384); 1112 Parry & Palmer.

Eryngium Deppeanum, Cham. & Schlecht. In woods near Morales (7 Schaffner); 285 Parry & Palmer, referred to *E. aquaticum*, Linn.

Eryngium serratum, Cav. On rocks, near Morales (8 Schaffner), and at Guanajuato (Dugès); 284 Parry & Palmer. Known as "Yerba del sapo."

Eryngium yuccæfolium, Michx., var. (?) Basal leaves short and narrow, margined with long slightly rigid setæ: rays slender and elongated, erect: heads small; floral bracts puberulent. — In the Caracol Mountains, southeast of Monclova (417).

ERYNGIUM CARLINÆ, Delar. In sandy places near San Luis Potosi (6 Schaffner); 286 Parry & Palmer, referred to *E. Wrightii*, which differs chiefly in the much more conspicuous rigid and spinose floral bracts.

EULOPHUS TEXANUS, Benth. & Hook. At Lerios, Coahuila (386).

EULOPHUS PEUCEDANOIDES, HBK. In the Sierra Madre, south of Saltillo (Palmer, sparingly), and near San Miguelito (5 Schaffner); 292 and 293 Parry & Palmer.

APIUM LEPTOPHYLLUM, F. Muell. At San Lorenzo de Laguna (385), at Monterey (2109, in part), and about San Luis Potosi (2 Schaffner); 294 Parry & Palmer. In several forms.

APIUM POPEI, Gray. At Monterey, Nuevo Leon (2109, in part).

CRANTZIA LINEATA, Nutt. Near Morales (1 Schaffner); 287 Parry & Palmer.

DISCOPLEURA LACINIATA, Benth. & Hook. At Sutherland Springs, Texas.

PEUCEDANUM MEXICANUM. Glabrous, the stout erect stem 2 or 3 feet high or more: leaves with a broadly dilated sheathing petiole, at least thrice ternate, the ultimate segments from linear to narrowly lanceolate, elongated, acute and acutely toothed or laciniate: umbel naked or with a few linear bracts, the rays (6 to 20) $\frac{1}{2}$ to $1\frac{1}{2}$ inches long; bracts of the involucels very narrow: flowers white: fruit very broadly elliptical (4 or 5 lines long by 3 or 4 broad), on pedicels 1 or 2 lines long, with thin wings and numerous vittæ, the dorsal ridges filiform: seed flattened-reniform, scarcely at all sulcate on the back, but with a shallow channel on the face. — On rocks near Morales (4 Schaffner); 288 Parry & Palmer. Known as "Ococotillo." 316 and 571 Bourgeau, referred to *Peucedanum* by Hemsley, are *Angelica Mexicana*, Vatke. Though certainly an *Angelica* rather than a *Peucedanum*, yet it is somewhat anomalous in some of its characters.

DAUCUS MONTANUS, Willd. At San Luis Potosi (3 Schaffner); 291 Parry & Palmer.

GARRYA OVATA, Benth. In the San Miguelito and San Rafael Mountains (888, 889 Schaffner); 295 Parry & Palmer, referred to *G. laurifolia.*

GARRYA LAURIFOLIA, Hartw. In the San Rafael Mountains (890 Schaffner).

2. *Descriptions of New Species of Plants, chiefly from our Western Territories.*

Myosurus cupulatus. Scapes slender, 2 to 6 inches high: anthers oblong, much shorter than the filaments: fruiting heads loose, long-conical, about an inch (3 to 16 lines) long: akenes short and subquadrate, cupulate at the summit with a raised and at length irregularly thickened light-colored margin, and with a broadly triangular slightly curved ascending beak. — Arizona: hills between the Gila and San Francisco Rivers, Rev. E. L. Greene; on the Santa Catalina Mountains, at 8,000 feet altitude, J. G. Lemmon; found by both collectors in April, 1880. Readily distinguished in fruit by the peculiar akenes. In habit it resembles *M. minimus*, which has less attenuated closely compact heads, on often very stout scapes, the rectangular akenes truncate and beakless or with a very short strictly appressed beak; the anthers linear and nearly equalling the filaments. In the usually small *M. aristatus* the loose heads are rarely more than 3 or 4 lines long, the oblong-ovate akene with a long slender somewhat spreading beak.

Myosurus sessilis. Without scapes, the flowers sessile or very nearly so: fruiting heads usually several (1 to 6) and crowded, much shorter than the leaves, stout and conical (2 to 6 lines long by a line or more in thickness at base): akenes with a prominent costa terminating in an erect or spreading subulate beak. — On alkali flats in Umatilla County, Oregon; J. & T. J. Howell, May, 1882.

Arabis furcata. Perennial, the slender stems ascending from a slender branching rootstalk, a foot high or more, glabrous: leaves sparingly pubescent and ciliate with branched hairs, the lower petiolate, oblong-obovate, acutish, with few teeth, an inch or two long, the cauline sessile, oblong to linear, mostly glabrous: flowers white, 3 to 5 lines long, with yellowish sepals: pods narrow, $\frac{1}{2}$ to $1\frac{1}{2}$ inches long, beaked by the thick style, on slender spreading pedicels 6 to 10 lines long. — On the bluffs of the Columbia, near the mouth of Hood River, Oregon; J. & T. J. Howell, in 1879, and with immature fruit in May, 1882; received also from Mrs. P. G. Barrett, of Hood River. A dwarf alpine form, with shorter pedicels, was collected on Mount Adams at the White Salmon glacier by W. N. Suksdorf in 1877, and again in 1879.

Arabis suffruticosa. Perennial, with a decidedly woody branching base, glabrous or sparingly stellate-pubescent, the erect subfastigiate stems a foot high: lower leaves linear-oblanceolate, acute,

about an inch long, the cauline more oblong and sessile or shortly auriculate-clasping: raceme few- (4–6-) flowered: sepals broad, the purplish petals twice longer (3 lines long): pods reflexed on pedicels 4 to 6 lines long, attenuate to a short style, 1½ to 2½ inches long by 1½ lines broad: seeds somewhat in two rows, orbicular, winged. — Collected on the bluffs of the Snake River and vicinity, Union County, Oregon, by W. C. Cusick, 1881.

Arabis Cusickii. Perennial, villous-pubescent throughout with loose scattered spreading simple hairs, the clustered leafy stems 3 to 5 inches high: lower leaves linear-oblanceolate, about an inch long, the upper linear-oblong and clasping but not auriculate at base, all entire or sparingly toothed: flowers few, pale pink or white, turning light purple, the petals three or four lines long, twice longer than the sepals and exceeding the pedicels: pods falcate, ascending, acutish, 1½ to 3 inches long by about a line broad; style none: seeds acutely margined. — On rocky ridges, Union County, Oregon; W. C. Cusick, 1879. Resembling *A. canescens* in habit, which is hoary with short dense stellate pubescence, and appears to have much smaller flowers.

Streptanthus diversifolius. Annual, glabrous, erect and slender, branching above, 1 to 1½ feet high: cauline leaves very narrow, pinnately divided with 1 or 2 pairs of narrowly linear lobes, the upper entire or nearly so; those on the branches broadly cordate and clasping, entire, ½ inch long or less: racemes few-flowered; pedicels divaricately spreading, 1 or 2 lines long: sepals 2 or 3 lines long, pale; petals with a rather broad exserted recurved blade, purple-veined: pods strongly reflexed, 1½ to 2½ inches long by less than a line broad. — On the Cosumne Creek, California; collected by V. Rattan in 1866.

Physaria Oregona.* Flowers apparently pale-yellow, the petals (3 or 4 lines long) twice longer than the calyx: style very short, less

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* The species of *Physaria* may be distinguished as follows. —

* Cells of the pod much inflated and much longer than the replum.

1. P didymocarpa, Nutt. Cells very obtuse and divergent. — From Colorado to British America and Eastern Washington Territory.

2. P. Newberryi, Gray. Cells less divergent. — New Mexico to Utah and Nevada? An obscure species.

* * Cells more or less compressed and but little exceeding the replum.

3. P. Geyeri, Gray. Pods small, obcordate; style as long as the pod. — Spokan Valley, Washington Territory

4. P. Oregona, Watson. Pods large, round-reniform, style very short. — Eastern Oregon.

than a line long: pod obcompressed, 5 to 10 lines broad, the narrowly linear replum 3 or 4 lines long, and the flattened obtusely rounded cells 1–4-seeded. — In gulches on Pine Creek, near Snake River, Union County, Oregon; W. C. Cusick, June, 1880. With the habit and foliage of the other species, but with the flattened pod of *Synthlipsis*, though the valves are nerveless and not carinate.

Draba chrysantha. Perennial, with leafy decumbent or erect stems (2 to 6 inches high) from a branching rootstock, which becomes covered with the persistent bases of dead leaves, sparingly pubescent with simple hairs: basal leaves narrowly oblanceolate, 1 to 2½ inches long, entire or occasionally with 1 or 2 teeth, sparingly ciliate, the cauline oblanceolate to lanceolate: raceme open, the bright yellow flowers on slender pedicels 2 to 6 lines long: pod glabrous, oblong (4 or 5 lines long), acute at each end and beaked by a slender style ½ to 1 line long. — In the high mountains of Colorado (above Golden City, at 12,500 feet altitude, Rev. E. L. Greene, 1871, and in the Sawatch Range, T. S. Brandegee, 1880), and on a peak south of Apache Pass, Arizona, J. G. Lemmon, 1881.

Caulanthus amplexicaulis. Annual, glabrous and glaucous, branching, suberect or lax and flexuous, 1 to 2 feet high: lower leaves oblong-obovate, obtuse, auriculate and clasping, coarsely and acutely toothed or sparingly denticulate or entire, 2 to 4 inches long, the upper round-ovate to oblong-ovate, entire, the uppermost more acute: racemes very loose: sepals 3 to 5 lines long; petals with a narrow recurved exserted limb, purple-veined: pods terete, about 3 inches long by ⅔ of a line wide, spreading or ascending on pedicels 3 to 6 lines long or more, with a thick bifid sessile stigma. — In the San Bernardino Mountains, California; collected in May, 1881, by S. B. & W. F. Parish, and by W. G. Wright.

Caulanthus glaucus. Glabrous and glaucous, stout, simple or sparingly branched, 1 to 2½ feet high: leaves rather fleshy, all petiolate, ovate to lanceolate, more or less narrowed at base, obtuse or acutish, the blade 1 or 2 inches long: sepals purplish, 4 lines long: petals greenish, exserted: pods subterete, very slender, 3 to 5 inches long, arcuate upon ascending pedicels 3 to 6 lines long, the conical sessile stigma slightly bifid. — At Candelaria, Esmeralda County, Nevada; W. H. Shockley, 1881.

Caulanthus inflatus. Annual, sparingly hispid or glabrous, erect, simple or at length branched, the stem fistulous and inflated, 1 or 2 feet high: leaves oblong to ovate, all sessile and auriculate, acutish, entire, 1 to 3 inches long: flowers purple, the glabrous sepals

somewhat saccate at base, 3 or 4 lines long; petals ligulate, scarcely exserted: pods nearly terete, 3 or 4 inches long, ascending on pedicels 2 to 4 lines long; stigma sessile, deeply bifid. — In the Mohave Desert, California; collected by J. G. Lemmon in 1880, and by the Parish Brothers in March, 1882. With the habit of *C. crassicaulis*.

Thlaspi Californicum. Biennial, the several stems 6 to 8 inches high, glabrous: lower leaves oblanceolate, attenuate to a slender petiole, with few teeth, the upper oblong-lanceolate, narrower toward the base and usually narrowly auriculate: flowers rather small, the petals 2 lines long: pods oblanceolate, acute at the summit, 4 or 5 lines long; cells 2–5-seeded. — At Kneeland Prairie, Humboldt County, California, among rocks at 2,500 feet elevation; discovered by Mr. Volney Rattan, June, 1882. Differing from the alpine *T. alpestre*, which is usually a perennial, in its narrower oblong stem-leaves and in its longer acute pod, which is exactly that of *Iberidella*.

Cleomella brevipes. Low and branching (6 inches high or less), glabrous, leafy: leaves sessile or nearly so, the leaflets narrowly oblanceolate, setosely apiculate, 2 to 8 lines long: flowers very small, solitary in all the axils, on curved pedicels about a line long: pod ovate, pendulous, very shortly stipitate, 1½ lines long. — At Camp Cady in the Mohave Desert, California; S. B. & W. F. Parish, May, 1882. Very peculiar in its axillary inflorescence, and short pedicels and stipes.

Claytonia cordifolia. Stems 4 to 12 inches high from a slender running rootstock, bearing toward the summit a single pair of sessile ovate acute leaves about an inch long; radical leaves broadly cordate, acutish, the blade 1 or 2 inches long: flowers few (about 6 or 8) upon slender pedicels in a naked raceme; petals 3 or 4 lines long, thrice longer than the rounded sepals. — Collected by Dr. Lyall in 1861 on the Pend d'Oreille River in N. Idaho, and in Oregon by Rev. R. D. Nevius in 1872; found by me in 1880 in the mountains north of Missoula, Montana, in the damp shade of firs and spruces. Nearly allied to *C. Sibirica*, differing in the shape of the leaves, the naked few-flowered raceme, and more rounded sepals.

Claytonia ambigua. Root thickish and fusiform: stems branching from the base, low, stout and fleshy, leafy: leaves alternate, narrowly oblanceolate, obtuse, 1 or 2 inches long: flowers in axillary subsessile fascicles or short crowded racemes, with scarious bracts, the pedicels 1 to 3 lines long; petals unequal, shorter than the sepals, which are 1½ to 2 lines long: stamens 5: capsule ovate-oblong, shorter than the calyx, 12–15-seeded: seed shining. — Plains at El

Rio on the Colorado, S. E. California, by J. G. Lemmon, March, 1881. A peculiar species, with the numerous seeds of a *Calandrinia*, but the flowers more like those of *Claytonia*, and the number of stamens constant.

Silene Parishii. Perennial, the leafy stems (4 to 6 inches high) clustered upon a thick root, pubescent throughout with a short wool which is longer on the stems and viscid: leaves oblanceolate, acute or acuminate, 1 or 2 inches long: flowers 3 to 5, approximate and leafy-bracted, on short petioles; calyx an inch long, narrowed below, the acuminate teeth 3 or 4 lines long; petals white or nearly so, with a broad claw, the scarcely exserted blade 2-parted and the lobes deeply bifid into hairy filiform segments with a narrow lateral one on each side; appendages broad, truncate and toothed: styles at length long-exserted: capsule very shortly stipitate, nearly equalling the calyx: seeds flattened, with a wing-like lacerate double crest. — In the San Bernardino Mountains, California; L. B. & W. F. Parish, August, 1881. A well-marked species, allied to *S. Hookeri* and *S. Californica*.

Silene platyota. Minutely pubernlent, glandular above, the slender erect or ascending stems 1½ feet high: leaves oblanceolate, acute or acuminate, the lower with ciliate winged petioles: peduncles rather slender, 1–3-flowered: calyx narrow, green-nerved, acutely toothed, 6 lines long; petals greenish, broadly auricled, the free lobes of the auricles entire or sublacerate; blade bifid, the oblong lobes entire or usually irregularly notched; appendages oblong, lacerate; filaments and claws somewhat villous: styles and stamens slightly exserted: capsule oblong, 4 lines long, on a short stipe: seed crested with a single row of tubercles, the sides tessellated. — In the Cuyamaca Mountains (Dr. E. Palmer, 1875), in the San Bernardino Mountains (J. G. Lemmon, 1879), and in the San Jacinto Mountains (Parish Brothers). Belonging to the *S. Douglasii* group.

Silene plicata. Rather stout and tall (2 feet high or more), pubescent with short spreading somewhat glandular hairs: leaves oblanceolate, or the upper narrowly lanceolate, acute, 3 or 4 inches long: inflorescence elongated, naked above, the erect peduncles 1–3-flowered: calyx ovate, with 10 green nerves, 4 lines long, the triangular teeth a third as long: petals white, a little exserted, the blade bifid with oblong lobes and narrow acute lateral teeth, the claw broad and the produced auricles nearly equalling the short-oblong entire appendages and somewhat folded upon the base of the blade: stamens and styles included: capsule sessile or nearly so, ovate-oblong, 4 or 5

lines long: seeds strongly tuberculate on the back, not crested.— On a peak south of Rucker Valley, Arizona; J. G. Lemmon, 1881. Allied to *S. Thurberi*.

Arenaria pusilla. A dwarf slender annual, an inch or two high, resembling *A. Californica* in its habit and short thick bluntish leaves, but the narrower lanceolate sepals acute or acuminate and obscurely 1-nerved, and the petals wanting or very small: capsule oblong-ovate, as long as the sepals: seeds turgid, smooth. — Collected on the plains about Yreka, California, by Rev. E. L. Greene, in April, 1876; at White Salmon, Washington Territory, by W. N. Suksdorf, in 1880; and at The Dalles, Oregon, by J. & T. J. Howell, 1882. Greene's specimens were referred to *A. Californica* in Bot. Calif. 2. 435.

Arenaria macradenia. Perennial, with a branched woody root-stock, the herbaceous stems a foot high, glabrous throughout excepting the slightly ciliate base of the rigid linear-subulate pungent leaves, which are ½ to 2 inches long: flowers large, on slender often elongated pedicels; sepals somewhat fleshy, with scarious margins, ovate, acute, nerveless, 2 or 3 lines long; petals greenish-white, entire, exserted: stamens included, the filaments opposite to the sepals with a pair of large yellowish glands adnate to the base: stigmas subcapitate: capsule ovate-globose, 1½ lines long. — Near the Mohave River (41 Palmer, 1876), and in the mountains bordering the Mohave Desert (S. B. & W. F. Parish, May, 1882). Remarkable among the allied perennial species for the large glands of the staminiferous disk.

Lepigonum gracile. Annual, slender, glabrous, 2 to 4 inches high: leaves very narrow, 3 to 12 lines long; stipules deltoid: pedicels ascending, 2 to 4 lines long: sepals fleshy, short, obtuse, ½ to nearly 1 line long: petals none: capsule ovate, equalling or a little exceeding the calyx: seeds triangular-pyriform, strongly rough-tuberculate, not margined. — Common on sandy lands near Dallas, Texas (J. Reverchon), and in dried ponds on mesa land near Wilmington and Compton, Los Angeles County, California (Rev. J. C. Nevin). It is nearly allied to the European *L. segetale*, and also to *L. Mexicanum*, from which it differs especially in its smaller calyx and capsules, and more angular and rougher seeds.

Malvastrum Rugelii. Woody-stemmed, erect and branching (2 or 3 feet high or more), rather sparingly pubescent with straight appressed forked hairs: leaves ovate to oblong-ovate, abruptly narrowed at base, acutish, acutely serrate, ½ to 1½ inches long, exceeding the petioles: flowers nearly sessile, solitary or few in the upper axils

and in a short crowded terminal spike: calyx-lobes triangular, acute or subacuminate, usually closing over the fruit, corolla apparently yellow, 2 or 3 lines long: carpels rounded and blunt. — Collected by Rugel at the mouth of the Manatee River, Southwestern Florida, in 1845, and distributed by Shuttleworth as a variety of *Malva Americana*, Linn. It was also collected by Dr. Garber in 1877 on the Miami River, and by A. H. Curtiss on the Mosquito Lagoon, and distributed by him under the name *Melochia serrata* in his third fascicle. It resembles most nearly *M. tricuspidatum*, but with the blunt carpels of *M. spicatum*.

Malvastrum densiflorum. Perennial, stout, erect and branched, 2 feet high or more, roughly stellate-pubescent: leaves round-cordate, somewhat 3-lobed, crenately or acutely toothed, 1 to 1½ inches in diameter, the petioles usually much shorter: inflorescence dense and very hispid, the conspicuous bractlets very narrow, hispid, exceeding the calyx: fruiting calyx 6 to 8 lines long, membranous, the lobes long-attenuate; corolla apparently purple, 6 to 8 lines long: stamineal column very short: carpels smooth and nearly glabrous, obtuse. — Southern California, at Agua Caliente in the San Jacinto Mountains (S. B. & W. F. Parish, and W. G. Wright, 1881), and at San Juan Capistrano (Rev. J. C. Nevin).

Anoda reticulata. Annual, erect, simple or sparingly branched above, 2 feet high, finely stellate-pubescent: leaves broadly ovate, truncate or cordate at base, and often more or less hastately lobed, acute or acutish, dentate, an inch long or less, the upper linear-hastate and the uppermost reduced to minute bracts: pedicels slender, 1 to 3 inches long: petals blue, 3 lines long, twice longer than the calyx: carpels 10, truncate above and rounded on the back, with a double wall, the outer wholly open at the sides, the inner enclosing the seed and deciduous with it, strongly reticulated and at length perforated, and dark-colored: seed a line long. — In the Santa Catalina Mountains, Arizona; J. G. Lemmon and C. G. Pringle, May, 1881. Remarkable for the character of the double-walled carpels, an approach to which is also found in *A. parviflora* (*A. Wrightii*)

Hermannia pauciflora. Branching from the woody base, a foot high or less, stellately pubescent: leaves ovate to ovate-oblong, cordate or truncate at base, 6 lines long or less, on short petioles, dentate: flowers solitary in the axils, on slender pedicels; the yellow petals (4 lines long) twice longer than the acutely lobed calyx, which is not enlarged in fruit: styles distinct or coherent at the apex. capsule 4 or 5 lines long, the dorsal crest of the carpels with short rather blunt

teeth. — In the Santa Catalina Mountains, Arizona; C. G. Pringle, 1881. Our other species, *H. Texana*, Gray, is taller, with the twice larger reddish flowers more or less panicled, the calyx-lobes more acuminate, the petals more abruptly contracted to a comparatively narrower claw, and the carpels pectinately crested. The narrowed base of the erect petal is in both species strongly concave or channelled.

Lupinus Plattensis. (*L. ornatus*, Dougl., var. *glabratus*, Watson.) Stems herbaceous from an underground rootstock; appressed silky-villous throughout, with a somewhat glaucous hue: leaflets 7 to 9, spatulate, acutish or obtuse, glabrous above, on rather short petioles: racemes loose, shortly peduncled; bracts short, deciduous: flowers half an inch long, pale blue, with a conspicuous darker spot upon the standard. — A readily recognized species, common on the Upper Platte and northward.

Lupinus Havardi. Apparently perennial, the several herbaceous stems 1 to 1½ feet high, leafy, at length branched, loosely appressed silky-villous throughout, the pubescence upon the stems mostly short: leaflets 7, oblanceolate, glabrous above, 4 to 10 lines long, short-petioled; stipules very narrow, elongated: raceme elongated, the deciduous bracts shorter than the narrow slightly gibbous calyx: petals purple with a light spot on the standard, broad, 6 lines long: pod narrowly linear, 12 to 18 lines long by 2 broad, 6–8-seeded. — Hills near Presidio, W. Texas; Dr. V. Havard, U. S. A., May, 1881. Allied to *L. sericeus*, *L. Sitgreavesii*, and some Mexican species, and the most eastern representative of the group.

Dalea rubescens. (*D. nana*, Torr., var. *elatior*, Gray, Pl. Wright. 1. 46.) With the simple tall erect stems and dense oblong heads of *D. aurea*, but more slender, the leaves pinnately trifoliolate, and the flowers smaller, the yellow petals becoming purplish. — Western Texas; at the Limpia Pass, 124 Wright, and at Fort Davis, Dr. V. Havard, 1881.

Dalea scariosa. Glabrous and glaucous, the herbaceous stems slender and branching: leaflets 7 to 9, cuneate-obovate, obtuse or retuse, 3 or 4 lines long; lower half of the rhachis naked: spike dense, becoming 2 inches long and open in fruit, on a short peduncle; bracts thin and greenish, ovate, acuminate, the white margin somewhat lacerate: calyx slightly pubescent and obscurely ribbed, the acuminate narrowly deltoid teeth about half the length of the tube and somewhat tomentose on the margin; petals pink. — Near Albuquerque, New Mexico; Rev. E. L. Greene, 1877.

Astragalus terminalis. Perennial, canescent with a fine white appressed pubescence, the slender stems 6 to 10 inches long: leaves long-petiolate, with broad triangular stipules: leaflets 6 to 8 pairs, linear-oblong to oblong-obovate, obtuse, 3 to 5 lines long: raceme an inch long, open, long-pedunculate: flowers nearly sessile, reflexed, purplish, 5 lines long: calyx campanulate, the teeth very short and broad; keel with a very short blunt purple beak: pod coriaceous, sessile, straight, erect, narrowly oblong and turgid, 6 lines long, narrowly channelled on the back and nearly 2-celled, the ventral suture prominent. — Southern Montana, on the gravelly bank of Red Rock Creek, in July, 1880, near the then terminus of the Utah and Northern Railroad; S. Watson. Nearly allied to *A. adsurgens*.

Astragalus gigantulus. Perennial, the stout erect stems 2 to 3 feet high or more, tomentose: leaves villous-pubescent and subtomentose; leaflets 5 to 10 pairs, oblong-ovate, acute, 6 to 9 lines long, less pubescent above; stipules broad: racemes short and rather few-flowered, erect, pedunculate: pods 2-celled, coriaceous, ovate, acuminate, somewhat compressed and the ventral suture impressed, sessile, erect, 9 lines long. — At Fort Davis, Western Texas; Dr. V. Havard, 1881. Flowers unknown. A striking species, which seems to have escaped all previous collectors.

Astragalus grandiflorus. Dwarf, densely cespitose and scarcely caulescent, covered throughout with a subappressed villous pubescence: leaflets 7 or 9, oblong-obovate to nearly orbicular, 2 to 5 lines long: peduncles shorter than the leaves (1 to 1½ inches long), few-flowered: calyx cylindrical, about 9 lines, the narrow teeth 2 or 3 lines long; petals purplish red, 16 to 18 lines long, the claws exserted, and the keel nearly straight and erect: ovary densely white-silky, sessile, narrowly oblong, 1-celled. — In the San Bernardino Mountains, toward the Mohave Desert, at 5,000 feet altitude; S. B. & W. F. Parish, May, 1882. Evidently belonging to the group of *Eriocarpi*, with unusually large reddish flowers.

Astragalus Vaseyi. Near *A. Hornii* and *A. crotalariæ*, apparently biennial, canescent with appressed silky pubescence, a foot high or less: leaflets 7 to 10 pairs, obtuse or acutish, mucronate, 3 to 8 lines long: peduncles exceeding the leaves; raceme rather loose: calyx-teeth acuminate-deltoid, little shorter than the campanulate tube; petals purple or purplish, 4 lines long: ovary silky: pod membranous, ovate-oblong with a straight ventral suture, sessile, usually reflexed, finely pubescent, about 9 lines long. — At Mountain Springs, San Diego County, California, by G. R. Vasey, 1880, and by several col-

lectors since from various localities in the mountains of San Bernardino and San Diego Counties.

Astragalus conjunctus. Perennial, with very short stems, very sparingly appressed-pubescent: leaflets 5 to 10 pairs on an elongated rhachis, linear, 4 to 6 lines long: peduncles elongated (6 to 12 inches high), bearing an open few-flowered raceme; pedicels very short: calyx narrowly tubular, 3 or 4 lines long, dark-pubescent, with short narrow teeth: petals pale purple, 6 to 8 lines long: pod coriaceous and rugose, erect, sessile, narrowly oblong and nearly straight, acuminate, 1-celled with the dorsal suture impressed, 9 to 12 lines long. — In John Day Valley, Oregon (J. Howell, in May, 1880), and on sterile rocky ridges in Baker County, by W. C. Cusick, 1881.

Lathyrus Cusickii. Glabrous or sparingly pubescent, slender, from a slender perennial rootstock, ½ to 2 feet high, without tendrils: stipules narrowly semisagittate; leaflets 2 or 3 pairs, linear-lanceolate to narrowly linear, acute or acutish and mucronate, 2 or 3 inches long: peduncles equalling or exceeding the leaves, 2–3- (rarely 5-) flowered: corolla white, 10 to 12 lines long; the calyx 3 or 4 lines long, with nearly equal teeth. pod attenuate to a narrow base, 1½ to 2 inches long by 3 lines broad: hilum short. — On dry mountain slopes, Union County, Oregon; W. C. Cusick. Resembling narrow long-leaved forms of *L. palustris*, but with much larger white flowers, the tendrils wholly wanting, and the hilum of the seed much shorter.

Desmanthus obtusus. Decumbent, finely pubescent: pinnæ usually two pairs, upon a very short rhachis (rarely ½ inch long); leaflets oblong, veined: head small and few-flowered, on peduncles much exceeding the leaves (1 to 2½ inches long): pods narrowly linear (8 to 16 lines long), straight, obtuse or slightly narrowed at base, obtuse and apiculate at the apex. — Western Texas; Dr. V. Havard, August, 1881. Allied to *D. reticulatus*, Benth.; see page 349.

Ivesia Utahensis. Alpine, the short caudex densely covered with the remains of dead leaves, viscid-pubescent but the pubescence less glandular above, the prostrate stems ½ to 1½ feet long: leaves mostly radical, about 2 inches long, with numerous approximate 3–5-parted leaflets, the segments oblong-oblanceolate, obtuse, 1 or 2 lines long; cauline leaves few, short and with few nearly entire leaflets; stipules large, ovate: inflorescence somewhat dense: calyx 1½ to 2 lines long, the teeth equalling or exceeding the tube, and the accessory lobes narrow; petals white or pinkish, narrowly spatulate, slightly exceeding the sepals: stamens 10: pistils 1 to 3, on a very villous receptacle. — On the summit of Bald Mountain in the Wahsatch

range, above Alta, at over 12,000 feet altitude; Marcus E. Jones, August, 1879.

Saxifraga eriophora. Radical leaves oblong-ovate, dentate, obtuse, glabrous above, reddish and more or less densely rufous-tomentose beneath, the broad petiole equalling the blade (about ½ inch long) and ciliate with long woolly hairs: scape glandular-pubescent, the flowers subcymose, with linear-lanceolate bracts: calyx glabrate, broadly campanulate, the purplish lobes broad and rounded, half the length of the spatulate pinkish petals: ovary 2-parted, adnate to the calyx at base. — On the northern slope of the Santa Catalina Mountains, Arizona, at 6,000 feet altitude; J. G. Lemmon, May, 1881. Resembling *S. Virginiensis* and *S. nivalis*.

Sedum divergens. Perennial, the rather stout stem 2 to 4 inches high: lower leaves broadly ovate or obovate, sessile, 3 or 4 lines long, the cauline narrower and somewhat spatulate: inflorescence close, with short branches: flowers yellow, pedicellate, the lanceolate petals (3 lines long) thrice longer than the triangular-ovate sepals, and equalling the stamens: carpels united at base, very widely divergent above. — In the Cascade Mountains, Washington Territory; on Mount Adams, by W. N. Suksdorf, September, 1880, and by myself near the summit of Yakima Pass, October, 1880.

Sedum divaricatum. Perennial and cespitose, with slender branching rootstocks, the lower rosulate leaves oblanceolate, obtuse or acutish, roughish on the margin, 6 lines long or less: flowering stems 2 to 8 inches high, with scattered oblanceolate leaves, or the upper leaves and bracts lanceolate: inflorescence umbellate, the branches once forked: flowers nearly sessile, bright yellow, with short lanceolate sepals and narrowly lanceolate acuminate petals: carpels broadly divergent above the united bases. — Collected by W. C. Cusick in Union County, Oregon. These two species resemble in their spreading carpels *S. Douglasii*, which is distinguished by its lanceolate acuminate leaves.

Cotyledon viscida. Shortly caulescent: leaves numerous and very viscid, linear to linear-lanceolate, attenuate upward and obtusely triquetrous, the outer about 3 inches long: flowering stems slender, a foot high, with similar leaves ½ inch long: flowers in a spreading cymose panicle, on pedicels 1 or 2 lines long; sepals purplish, ovate-lanceolate, 1½ lines long, the reddish corolla cleft to below the middle, 4 lines long and equalling the stamens and styles. — Abundant on rocks near the Hot Springs at San Juan Capistrano, Los Angeles County, California; Rev. J. C. Nevin, October, 1881.

COTYLEDON OREGONENSIS. Flowering stems 6 to 10 inches high, from a running rootstock, the rosulate basal leaves spatulate, obtuse, 8 to 15 lines long; cauline leaves oblong-spatulate, 6 lines long or less: peduncles axillary along the upper stem, $\frac{1}{2}$ to 1 inch long, bearing short simple or compound few-flowered racemes; pedicels a line or two long, with small bractlets: sepals deltoid, short; petals pale yellow, united to below the middle, 4 lines long: stamens slightly shorter. — Found in the Cascade Mountains, Northern Oregon, by J. & T. J. Howell, June, 1880. A peculiar species, both in its habitat and in its inflorescence.

ŒNOTHERA (CHYLISMIA) HETEROCHROMA. Annual, erect (a foot high), sparingly branched above, glandular-pubescent throughout: leaves ovate-lanceolate (an inch long or less), dentate or nearly entire, the villous pubescence less glandular; floral bracts minute: flowers in nearly strict racemes, erect on short slender pedicels, calyx-tube narrowly obconical ($1\frac{1}{2}$ lines long), about equalling the lobes; petals purple with whitish base: capsule clavate, 4 lines long: seeds oblong-obovate. — At Candelaria, Esmeralda County, Nevada; W. H. Shockley, 1881.

ŒNOTHERA (SPILÆROSTIGMA) REFRACTA. Annual, erect, diffusely branching, about a foot high, somewhat glandular-puberulent: leaves narrowly lanceolate to linear, slightly sinuate-toothed, 1 or 2 inches long: flowers sessile, axillary and spicate, the upper approximate and nodding in bud: calyx-tube narrowly obconic, 2 to $2\frac{1}{2}$ lines long; petals pale-yellow, 2 or 3 lines long: stigma large and spherical, exserted: capsule slender, nearly terete, striate, straight or somewhat curved, 10 to 18 lines long, at length usually abruptly reflexed: seeds linear, nearly white. — Southern California to Southern Utah, from several collectors. First collected by Dr. Bigelow near the Colorado (*Œ. dentata*, Torr. in Pacif. R. Rep. 4. 87, in part), and distributed as *Œ. strigulosa*, var., in Palmer's collection of 1876 in Arizona and S. Utah (n. 165). It has also been mistaken for *Œ. alyssoides*, and is in some respects intermediate between the two species.

ECHINOCYSTIS (?) PARVIFLORA. Stem very slender, glabrous: leaves scabrous above, an inch long or less, cordate, acute, deeply 3-lobed, the lateral lobes somewhat quadrate: tendrils not branched: flowers numerous, minute, white, in very slender sessile panicled racemes, the pistillate solitary in the axils of the panicle and shortly pedicellate; corolla rotate, deeply 5-cleft, a line wide: anthers 3, nearly sessile, united, recurved: ovary semi-obovate, with a long filiform beak (the whole 3 lines long), compressed, sparingly echinate,

1-celled and 1-ovuled; ovule erect: stigma capitate, scarcely lobed. — In the San Bernardino Mountains, California; W. G. Wright, 1880. An apparent congener of *Elaterium Bigelorii*, Watson, which is referred to *Echinocystis* by Cogniaux. His reference is here followed provisionally, but the species are probably to be separated as a distinct genus.

Dewitya vestita. Acaulescent, with a stout rootstock, densely covered throughout with white soft spreading hairs: leaves compoundly pinnate, the numerous crowded confluent segments oblong, obtuse or acute, a line or two long: peduncles about equalling the leaves, 2 or 3 inches high; involucre none; rays numerous, stout, nearly an inch long; bracts of the involucels several, short, lanceolate; sterile secondary rays slender, $\frac{1}{2}$ inch long or more: fruit sessile or nearly so, pubescent, $2\frac{1}{2}$ lines long. — Summit of Mount Baldy, near San Bernardino, California; S. B. & W. F. Parish, August, 1880. A very peculiar species.

Angelica Lyallii. Stout, 4 or 5 feet high, glabrous: leaves ternate-pinate, the leaflets 3 or 4 inches long (or in the upper leaves 1 to 3 inches), lanceolate, acute or acutish, mostly cuneate at base, unequally dentate: umbels 30–50-rayed, wholly naked; rays very unequal (1 to 3 inches long): fruit glabrous, 2 lines long, the dorsal ribs thick and corky. — Collected by Dr. Lyall in the Galton and Cascade Mountains, near the British Boundary, in 1859 and 1861; by Rev. R. D. Nevius in Oregon, in 1873; and by myself in the mountains near Missoula, Montana, in 1880. A. genuflexa, Nutt., from Oregon and Washington Territory, is a more slender species, more or less rough-pubescent, especially upon the inflorescence, with more acuminate incisely toothed leaflets, the umbellets involucellate, and the fruit larger. A. arguta, Nutt., reported by him from Vancouver Island, has not since been collected. It is described as glabrous, with small ovate rather acute leaflets and large oblong-elliptical fruit. *A.* (?) *verticillata*, Hook., judging from the description given, probably belongs to some other genus.

Lonicera Utahensis, Watson. It appears probable that the single flower collected with the original specimens, upon whose characters the species was chiefly based, was an abnormal one. Otherwise the species closely resembles *L. ciliata*, but differs in its more oblong and always obtuse leaves. It ranges from Southern Utah to Northwestern Montana and Northern Idaho, and to the Blue Mountains of Oregon, and includes all the so-called *L. ciliata* of that region.

Douglasia dentata. Rather stout, branching, canescent with a fine mostly dense pubescence: leaves rosulate at the nodes, thick, oblong, obtusish, mostly with 1 to 3 blunt teeth on each side toward the summit, 4 to 6 lines long: peduncle (an inch long) bearing a simple few-flowered umbel; pedicels very unequal (2 to 12 lines long): calyx narrowed at base, 3 lines long in fruit, the acuminate lobes nearly as long as the tube: capsule oblong, slightly stipitate, equalling the calyx-tube. — In the Cascade Mountains, on a dry ridge above Peshaston Cañon, Yakimah County, Washington Territory; collected by myself, in fruit, October, 1880. Near *D. lævigata*, Gray.

Pedicularis Furbishiæ. Stem simple or sparingly branched, leafy, pubescent, about 3 feet high: lower leaves on slender petioles, more or less completely pinnate, with pinnatifid segments, the upper sessile and pinnatifid; lobes acutely toothed, slightly white-margined; bracts very broadly ovate, cuneate at base, irregularly laciniate: calyx short (3 or 4 lines long), the five lanceolate teeth usually laciniate at the apex; corolla greenish yellow, narrow, 8 lines long, the suberect galea a little exceeding the lip, its cucullate summit truncate and often shortly bicuspidate: capsule ovate, oblique, about equalling the calyx. seeds oblong-ovate, flattened and somewhat wing-margined, the testa loose, light-colored, and finely rectangular-pitted. — On wet banks of the St. John's River, at Van Buren, Arostook County, Maine, and extending along the river for sixty miles. Dedicated to its discoverer, Miss Kate Furbish, whose careful study of the flora of her State, and perseverance and success in illustrating it by colored drawings of all the species, richly deserve an appropriate recognition. The species is allied to *P. Canadensis* and *P. bracteosa* It may be worth the while to note the differences in the seeds of these species, which in *P. Canadensis* are ovate and turgid, with a close thin brownish testa, and in *P. bracteosa* are oblong, somewhat concavo-convex, and with 3 to 5 strong corky longitudinal ribs.

Mirabilis tenuiloba. Viscid-pubescent, and resembling *M. Californica*, from which it may be distinguished by its more acute or somewhat acuminate cordate leaves, and by the larger involucre (4 or 5 lines long), cleft to or below the middle, the segments narrowly lanceolate. — In San Bernardino County, California; W. G. Wright, 1880.

Oxybaphus linearifolius. Slender, 2 feet high, with spreading branches from alternate axils, glabrous excepting the pubescent peduncles, involucres and flowers: leaves linear, attenuate to the base, the lower 3 or 4 inches long: peduncles very slender, spreading or

reflexed, 2 to 4 lines long: involucre 1–2-flowered, becoming 6 lines broad, cleft to below the middle, the lobes acute or acuminate: perianth greenish, campanulate, 2 or 3 lines long: stamens 5: fruit oblong-obovate, pubescent, very prominently 5-costate, the costæ very thick and nearly contiguous. — Plains near Apache Pass, in the Chiricahua Mountains, Arizona; J. G. Lemmon, 1881. Resembling forms of *O. nyctagineus*, but more slender and with more leafy and less pubescent inflorescence, the more deeply and acutely lobed involucre with fewer flowers, and the fruit more prominently ribbed.

Boerhaavia pterocarpa. Annual, branching from the base, scabrous-puberulent, a foot high or less: leaves ovate to oblong-lanceolate, obtuse or acutish, cuneate at base, entire or somewhat sinuate-toothed, ½ to 1 inch long: peduncles axillary and terminal, short, bearing an umbel of 3 to 6 white or pinkish flowers: fruit obpyramidal, attenuate to the very short pedicel, truncate, 3–5-sided and winged at the angles, the sides transversely rugose. — At Apache Pass, Arizona; J. G. Lemmon, 1881. Remarkable for its winged fruit.

Amarantus (Amblogyne) venulosus. Dioecious, nearly glabrous, erect, branching, leafy, 1 to 3 feet high: leaves linear-lanceolate, attenuate to a slender petiole, the blade 1 or 2 inches long: pistillate flowers in close axillary glomerate panicles; sepals twice longer than the single small ovate acute bract, becoming thickened at the rather narrow base, broadly dilated and rounded above, entire or emarginate or somewhat denticulate, and marked with green veins: seed ⅓ of a line broad. — Collected by Thurber at Santa Cruz, Sonora (*Sarratia Berlandieri*, var. *denticulata*, Torr. in Bot. Mex. Bound. 179), and in Rucker Valley and Apache Pass, Arizona, by J. G. Lemmon, 1881. Staminate plants not seen.

Acnida (Montelia) Floridana. Annual, tall and slender, diffusely branched: leaves linear to narrowly lanceolate, attenuate to a slender petiole: spikes elongated and very slender, interrupted; bracts short (scarcely ½ line long), acute or shortly acuminate: utricle very thin, rugled and somewhat tuberculate, at length bursting irregularly: seeds black and shining, obtusely margined, ⅔ of a line broad. — At Key West (Blodgett), on the sandy coast at North Clear Water Pass (Chapman), and in Southern Florida also by Dr. Garber and A. H. Curtiss. *A. tuberculata*, Gray, differs in its stouter habit, larger and broader leaves, closer and stouter spikes, and longer and more attenuate acuminate bracts.

Cladothrix oblongifolia. Stems procumbent, often 2 feet long, the branches ascending, and the whole plant covered with a very

dense persistent white stellate pubescence: leaves ovate-oblong or oblanceolate, attenuate to a slender or short petiole, acutish: flowers clustered, white. — On the banks of the Colorado, near Chimney Peak (Dr. Newberry) and at Yuma (C. G. Pringle), and in the Mohave Desert (S. B. & W. F. Parish). Differing from *C. lanuginosa*, Nutt. (to which Newberry's specimen is referred in Ives' Report and in the Botany of California), in its less prostrate habit, denser and more persistent pubescence, narrower leaves more attenuate at base, and rather smaller and paler flowers.

Atriplex orbicularis. Monœcious, perennial and somewhat woody at base, 3 to 4 feet high, subcanescent with very fine pubescence: leaves alternate, oblong-obovate, an inch long or more, retuse or obtuse and apiculate, attenuate to a very short slender petiole: inflorescence paniculate, naked or leafy below, the small dense staminate clusters with the pistillate flowers and in slender terminal moniliform spikes; pistillate flowers in sessile clusters: fruiting bracts herbaceous, thin, orbicular and compressed, somewhat coherent toward the base, entire, not appendaged on the back, 2 or 3 lines in diameter: ovary sessile; styles included: seed ½ line broad: radicle superior. — At Santa Monica, California, on the sea-shore at the base of the bluffs; S. B. & W. F. Parish, October, 1881. A strongly marked species, much resembling *A. hortensis*, from which it is separated especially by the dense heads of larger male flowers, the sessile ovary, and superior radicle.

Atriplex Parishii. Monœcious, annual (?), prostrate, diffusely branched and leafy throughout, the slender stems woolly-pubescent, 6 to 10 inches long: leaves alternate, farinose, small (2 lines long or less), sessile, ovate, acutish: pistillate and staminate flowers together, usually a pair of each in each axil; calyx 4-parted; bracts triangular-hastate, becoming 1½ lines long in fruit and somewhat rigid, the toothed lobes and acutish apex herbaceous: styles long and exserted: seed black, ½ line broad: radicle superior. — Costa Station, Los Angeles County, California, in alkaline soil; S. B. & W. F. Parish, October, 1881. Of the *A. patula* group.

Atriplex fasciculata. Monœcious, annual, branching from the base, scurfy-pubescent throughout, the ascending leafy stems 6 inches high or less: leaves alternate, oblanceolate, sessile, entire, obtuse or acutish, 3 to 5 lines long: flowers fascicled in all the axils, the staminate very small and mingled with the pistillate; fruiting bracts orbicular, compressed and coherent, very nearly sessile and often deflexed, nearly 1½ lines broad, not appendaged upon the back, the

narrow herbaceous margin minutely and mostly bluntly toothed. — Near Fish Ponds, Mohave Desert; S. B. & W. F. Parish, May, 1882. Resembling *A. elegans*, but the fruiting bracts much less conspicuously toothed.

Atriplex Parryi. Dioecious (?), perennial and woody, much branched and with rigid spinosely tipped slender divaricate leafy branchlets, white-scurfy throughout: leaves thick, sessile, cordate or broadly ovate, acute, 2 to 4 lines long: pistillate flowers 1 to 4 in the axils; bracts sessile, united below into a compressed-campanulate sac, becoming thick and rigid, bordered above by the broader rounded free margins, the whole about 1½ lines long in fruit and the margins somewhat more in breadth. — Near Colton, California; Dr. C. C. Parry, 1881. Resembling *A. confertiflora*, but with much smaller fruiting bracts, and their margins more broadly dilated in proportion.

Kochia Californica. Silky-pubescent and subtomentose throughout, much branched and the branches divergent: leaves linear-oblong, 5 to 6 (on the branches 2 to 4) lines long, about a line broad: flowers 1 to 5 in the axils, the calyx developing a wing about 3 lines broad. — Southern California; near Colton (C. C. Parry, 1881), and at Rabbit Springs, San Bernardino County (S. B. & W. F. Parish, May, 1882). Readily distinguished from *K. Americana* by its more diffusely branched habit and its proportionately broader leaves.

Polygonum (Avicularia) intermedium, Nutt., in herb. Annual, glabrous or somewhat rough-pubernlent, much branched from the base, the slender reddish quadrangular branches decumbent or procumbent, a foot long or less: leaves linear-lanceolate, acute, ½ to 1 inch long; the acuminate triangular sheathing stipules entire or finally lacerate: flowers axillary and in leafy-bracteate spikes, small (a line long or less), rarely reflexed in fruit: stamens 8. — On bluffs of the Columbia River, Oregon; C. G. Pringle, October, 1881, and by Nuttall, probably in the same region. Resembling *P. coarctatum*, but with much smaller flowers.

Eriogonum (Ganysma) apiculatum. Annual, slender, somewhat branched from the base, a foot high, nearly glabrous, the branches slightly glandular: leaves all radical, slightly hispid, spatulate, 1½ inches long: pedicels slender, spreading, 2 or 3 lines long, or the alar erect and longer: involucres turbinate-campanulate, nearly a line long: flowers nearly glabrous, pinkish, a line long, the outer segments obcordate, the inner oblong-obovate and emarginate, all apiculate in the sinus. — On the San Jacinto Mountains, at about 9,000 feet altitude; Parish Brothers, July, 1881. Of the *E. trichopodum* group.

ERIOGONUM PARISHII. Of the same group, and resembling the last in its foliage, glaucous, somewhat viscid with mostly stipitate glands, the 2 or 3 stems very diffusely branched above the first node, about a span high: pedicels very slender, spreading, 1 to 3 lines long: involucres turbinate-campanulate, $\frac{1}{3}$ of a line long or less: flowers very small ($\frac{1}{4}$ line long), red, minutely pubescent, the outer segments oblong-lanceolate, acute, the inner broadly oblong-spatulate and shortly apiculate. — Collected in the San Bernardino Mountains, also by the Parish Brothers, in August, 1881.

ERIOGONUM (OREGONIUM) DELICATULUM. Of the § *Corymbosa*, annual, very slender, low (3 to 5 inches high), glabrous above the base: leaves radical, tomentose, round to oblong, 1 to 3 lines long, with slender petioles: involucres narrowly turbinate, obscurely nerved, a line long: flowers yellow, very small: akene soon exserted, a half longer than the perianth. — In the Mohave Desert; Dr. C. C. Parry, 1881. Resembling *E. Mohavense*, but smaller and more slender, with narrower and less strongly nerved involucres, and the akenes exserted.

ERIOGONUM MOLESTUM. Resembling *E. virgatum*, slender, glabrous excepting the leaves, 1 to 3 feet high: leaves all radical, reniform to cordate or rounded, densely white-tomentose at least beneath, about an inch broad: involucres few and distant, rarely 2 or 3 together, 2 to 3 lines long: flowers white or pinkish. — Apparently frequent in the mountains of Southern California, from Los Angeles County to San Diego; collected by Palmer, D. Cleveland, Parish Brothers, Rev. J. C. Nevin, &c.

CHORIZANTHE CUSPIDATA. Prostrate, villous-pubescent, with leafy bracts: leaves narrowly oblanceolate, an inch long or less: floral bracts acerose: involucres numerous, loosely cymosely clustered, a line long, 6-toothed, without scarious margins, the alternate teeth shorter, and all armed with hooked awns: flower nearly sessile, villous, pinkish; lobes oblong, nearly equal, acutish, strongly nerved and the nerve excurrent as a short cusp. — Near San Francisco; Marcus E. Jones, 1881 (n. 2386). Allied to *C. Parryi*.

CORALLORHIZA ARIZONICA. Stem stout (1½ feet high), with 6 to 8 short sheathing leaf-scales, 10–15-flowered: flowers large, spurless and scarcely at all gibbous, the sepals and petals (6 to 8 lines long) several-nerved; lip dilated and strongly nerved, with 5 prominent ridges down the centre, 3-lobed above, the middle lobe undulate on the margin and somewhat cucullate: column a third shorter than the sepals, narrowly margined: capsule 6 to 8 lines long, narrowed to a

pedicel about equalling the bract. — In rocky places on the Santa Rita Mountains, Arizona; C. G. Pringle, July, 1881. Peculiar in the very slight gibbosity of the perianth, and in the number of ridges and strong veining of the lip.

Cypripedium fasciculatum, Kellogg, in herb. Dwarf (2 to 6 inches high), the villous-pubescent stem scariously sheathed at base and bearing a pair of nearly opposite ovate acutish leaves (2 to 4 inches long): peduncle viscid-pubescent, ½ to 1½ inches long, with a small lanceolate bract in the middle: flowers solitary, or usually several in a terminal cluster, bracteate, greenish: sepals and petals lanceolate, acuminate, 6 to 8 lines long, brown-veined, the lower sepals wholly united or very nearly so; lip depressed-ovate, greenish-yellow with brown-purple margin, 4 or 5 lines long: sterile anther oblong, obtuse, equalling the stigma. — Collected by W. N. Suksdorf on the White Salmon River, Washington Territory, above the falls, in May, 1880; by Mrs. R. M. Austin in May, 1881, near Prattville, Plumas County, California; and at some time previous by Mr. Bradley, probably in the mountains of Del Norte County. Resembling *C. guttatum*, of Alaska.

Iris tenuis. Rootstock very slender (a line or two thick): stems 8 to 10 inches high, with 2 or 3 bract-like leaves 2 or 3 inches long, 2-flowered; the longer leaves of the sterile branches of the rootstock equalling the stems and 4 to 6 lines broad: bracts contiguous, the longer about equalling the slender peduncles (2 to 4 inches long): flowers "white, lightly striped and blotched with pale yellow and purple;" perianth-tube 2 or 3 lines long, the segments naked, slightly spreading, oblong-spatulate, the outer 15 lines long, a little exceeding the emarginate inner ones: ovary 3 lines long. — Discovered by L. F. Henderson in 1881 on Eagle Creek, a branch of the Clackamas River, Oregon.

Allium Brandegei. Bulbs small, the reticulation of the coats horizontally oblong (as in *A. anceps*): leaves 2, exceeding the angular scape, 4 inches long by 1 or 2 lines wide: pedicels slender, equal, about 4 lines long: flowers rose-colored, the broadly lanceolate acute segments 3 or 4 lines long, nearly twice longer than the stamens: ovary not crested. — A pretty species, of the *A. Douglasii* group, found by T. S. Brandegee in the Elk Mountains, Colorado, where he reports it to be frequent.

Allium Parishii. Bulbs with numerous reddish-brown coats, without reticulation (or rarely minute and transversely short-oblong): scape rather stout, 4 to 6 inches high, with a single sheathing linear

elongated leaf: spathe-valves 2, broadly ovate: pedicels few (6 to 12), short and stout: petals bright rose-color, 6 to 8 lines long, lanceolate, acuminate, twice longer than the stamens: filaments lanceolate: crests prominent, acutish, irregularly toothed: stigma somewhat lobed. — In the mountains bordering the Mohave Desert, near Cushenberry Springs; Parish Brothers, May, 1882. A showy species of the *A. cristatum* group, with unusually large flowers.

Brodiæa stellaris. Resembling *B. minor:* leaves nearly terete: stems 2 to 6 inches high, from small fibrous-coated bulbs, bearing a 3–6-flowered umbel; pedicels unequal, very short: perianth narrow at base, 6 to 10 lines long, the greenish tube nearly equalling the deep-purple segments: filaments very short, winged on each side, the broadly oblong appendages half the length of the anther, which is 1½ lines long and shorter than the white deeply emarginate staminodia: ovary attenuate to a short stipe, acute, the cells 6–8-ovuled: capsule nearly equalling the perianth. — On high mountain sides near Ukiah, Mendocino County, California; collected by Mr. Carl Purdy, in June, 1881, who suggests the name with reference to the radiate appearance of the scapes and pedicels. Distinguished by the winged filaments, which resemble the corresponding ones of *B. capitata.*

Brodiæa filifolia. Leaves very narrow (½ line broad or less), about equalling the scape (a span high): pedicels unequal, ¼ to nearly 2 inches long: perianth 6 to 9 lines long, the broadly oblong segments exceeding the rather narrow tube, the outer segments mucronate: anthers 3, sessile, somewhat sagittate at base, 2 lines long, nearly twice longer than the triangular staminodia: ovary sessile; cells 2-ovuled: capsule oblong-obovate, 3 lines long. — Collected near San Bernardino by S. B. & W. F. Parish, in 1880, as also by G. R. Vasey. Distinguished by the short staminodia.

Calochortus longebarbatus. Stem slender, nearly a foot high, bulbiferous near the base, with 1 or 2 narrow radical leaves, 2-branched and usually 2-flowered at the summit: pedicels erect in flower and fruit, or nearly so: petals lilac, yellowish at base, an inch long, obovate, erose-denticulate at the rounded summit, with a broad glandular pit bordered above by very long flexuous hairs, otherwise nearly naked: anthers narrowly oblong, obtuse, nearly 2 lines long: capsule broadly ovate and winged, 6 to 10 lines long. — In low grassy grounds, Falcon Valley, Klickitat County, Washington Territory; W. N. Suksdorf, July, 1881. Allied to *C. nitidus.*

Tradescantia Floridana. Stems very slender, procumbent and matted, rooting at the lower joints, glabrous: leaves ovate-lanceolate,

acute, 8 to 10 lines long, thin and glabrous, minutely ciliolate, the scarious sheaths narrow and ciliate: peduncles usually terminal, 1 or 2, glabrous; umbel 3–8-flowered, involucrate with small ovate or lanceolate bracts; pedicels glandular-pubescent, 1 to 3 lines long: sepals slightly pubescent, purplish, a line long, a little shorter than the white petals: filaments naked; anther-cells closely contiguous: style stout, as long as the oblong-ovate ovary. — In damp shade, Central Florida, in St. John's and Sumter Counties, &c., collected by Miss Mary C. Reynolds, in 1878, and by J. Donnell Smith and A. H. Curtiss. Referred to *T. gracilis*. HBK., by C. B. Clarke in his revision of the order, from which it is clearly distinct, that species having bearded filaments and anther-cells widely separated upon a broad arcuate connective, broad and densely ciliate sheaths, rougher leaves, &c.

Cyperus serrulatus. Perennial, a foot high or less, the smooth stem exceeding the flat rough-edged leaves: involucral bracts 3 or 4, very scabrous-serrulate on the margin, mostly exceeding the subcapitate umbel: spikelets numerous, on very short rays, linear-oblong, 4 to 12 lines long, the spreading greenish acute scales flattened and acutely carinate, not decurrent on the rhachis, the keel serrulate toward the apex: nutlet triangular, oblanceolate, acutish, narrowing downward to a substipitate base, $\frac{1}{2}$ line long. — Received from Dr. George Vasey as collected in Placer County, California, in October, 1880.

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